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CATALOG OF TYPE SPECIMENS OF THE DARTERS (PISCES, PERCIDAE, ETHEOSTOMATINI)

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CATALOG OF TYPE SPECIMENS OF THE DARTERS (PISCES, PERCIDAE, ETHEOSTOMATINI)[1]

By Bruce B. Collette and Leslie W. Knapp[2]

Introduction

The darters are a tribe of small freshwater fishes restricted to North America. Some 212 specific and subspecific names have been proposed for the approximately 100 valid described species. About a dozen species await description. As part of a long-term study of these fishes, we have prepared this catalog of type specimens. We hope that our efforts will be of value in furthering systematic research and stabilizing the nomenclature of this most fascinating group of North American fishes.

In preparing this catalog we have attempted to examine or at least to verify the location of the type specimens of all nominal forms of the three presently recognized genera of darters: *Percina*, *Ammocrypta*, and *Etheostoma*. By type specimens we mean holotypes, lectotypes, syntypes, paralectotypes, and paratypes. Each form is

[1] Fifth paper in a series on the systematics of the Percidae by the senior author.

[2] Collette: Assistant Laboratory Director, Bureau of Commercial Fisheries Ichthyological Laboratory, Division of Fishes, U.S. National Museum; Knapp: Supervisor in charge of vertebrates, Oceanographic Sorting Center, Smithsonian Institution.

listed in alphabetical order by the generic and specific name used in the original description. If subgeneric allocation was made in the original description, that name has been placed in parentheses between the genus and the species. Holotypes or lectotypes are listed before paratypes or paralectotypes.

The following data appear after each name: (1) citation of original description; (2) catalog number; (3) number of specimens and range in standard length in mm. are in parentheses; sex is given in a few cases; (4) locality; (5) collector; (6) date of collection; (7) determination of current status with reference to pertinent literature.

All original descriptions were consulted to help determine whether a collection was actually type material. The generic and subgeneric arrangement is modified from that presented by Bailey (*in* Bailey, Winn, and Smith, 1954, and *in* Bailey and Gosline, 1955). The use of the tribe Etheostomatini for the darters follows Collette (1963).

Lectotypes were selected in some instances in order to stabilize nomenclature. The following people have assisted in the selection of lectotypes: Dr. Charles F. Cole (subgenus *Boleosoma*); Mr. Donald A. Distler (*E. spectabile*); Dr. Robert V. Miller (*E. blennioides*); Dr. Edward C. Raney (*P. notogramma*, *P. crassa*, subgenus *Nothonotus*); Dr. William J. Richards (*E. swannanoa*, *E. thalassinum*); Dr. Chu-fa Tsai (*E. histrio*, *E. rupestre*, and *E. zonale*). Brief data are presented for each lectotype herein selected and the following abbreviations are used: D=dorsal spines (Roman numerals) and rays (Arabic numerals); A=anal spines (Roman) and rays (Arabic); LL=number of lateral line scales; POM=number of preoperculomandibular pores; and INF=number of infraorbital pores. If the lateral line is incomplete, the number of pored scales is given first, separated from the number of unpored scales by a plus sign; if the infraorbital canal is incomplete, the number of pores in the anterior portion is separated from the number in the posterior portion by a plus sign.

Five nominal species are replacement names. No original material was saved of the five species of darters described by Constantine Rafinesque. Type material of 21 nominal species could not be located. In instances where a type series was divided among several institutions, we usually located some of the specimens. However, when all of the types of a form were deposited in one institution we were occasionally unable to locate any specimens.

About 1860, a considerable number of darters, including types of 16 species described by Charles Girard, were sent from the U.S. National Museum to the Museum of Comparative Zoology at Harvard University for Frederick Putnam to study. Many of these were cataloged into the MCZ collection (table 1), and Jordan and others subsequently believed them lost. Representatives from a number of

these series at the MCZ were later transferred to the University of Michigan Museum of Zoology by Carl L. Hubbs.

Another problem concerns the type material studied by Jordan at Indiana University. These specimens first received a lot number and

TABLE 1.—*Darter types transferred from USNM to MCZ*

USNM No.	First MCZ No.	Present MCZ No.	Species and describer	Locality
740	269	24599	*Pileoma carbonaria* Baird and Girard.	Tex., Río Salado
743	87	24625	*Diplesion fasciatus* Girard	Mex., Chihuahua R.
744	82	24575	*Boleosoma lepida* Baird and Girard.	Tex., Río Leona
745	84	24567	*Boleichthys elegans* Girard	Tex., Piedrapainte
748	83	24580	*Oligocephalus leonensis* Girard	Tex., Río Leona
1157	130	24546	*Hadropterus maculatus* Girard	Md., Potomac R.
1175	257	24636	*Pileoma zebra* Agassiz	Lake Superior
1179	1179	1179	*Aplesion potsii* Girard	Mex., Chihuahua R.
1182	85	24576	*Oligocephalus grahami* Girard	Tex., Devil's R.
1187	22	24652	*Catonotus fasciatus* Girard	N.Y., Grass R.
1188	101	24589	*Boleosoma fusiforme* Girard	Mass., Charles R.
1192	87	24625	*Diplesion fasciatus* Girard	Mex., Chihuahua R.
1197	122	24603	*Hadropterus nigrofasciatus* Agassiz.	Ala., near Mobile
1203	16	24634	*Oligocephalus humeralis* Girard	Va., James R.
1203	16	35975	*Oligocephalus humeralis* Girard	Va., James R.
1206	87	24625	*Diplesion fasciatus* Girard	Mex., Chihuahua R.
1283	93	24570	*Microperca punctulata* Putnam	Wis., Oconomowoc R.
1288	94	24690	*Microperca punctulata* Putnam	Mich., Pt. Huron
1294	96	24582	*Microperca punctulata* Putnam	Mich., Detroit R.
1303	129	24525	*Hadropterus maculatus* Girard	Md., Potomac R.
1311	270	24616	*Pleurolepis pellucidus* Agassiz	Ohio, Black R.
1327	----	32952	*Boleichthys warreni* Girard	N. Dak., Cannon Ball R.
1328	113	113	*Boleosoma gracile* Girard	Tex., Río Seco
1333	41	24569	*Boleichthys whipplii* Girard	Okla., Coal Cr.
1334	----	32950	*Oligocephalus pulchellus* Girard	Okla., Gypsum Cr.
1336	114	24728	*Boleichthys exilis* Girard	N. Dak., Little Muddy R.
1365	2	24658	*Catonotus Kennicotti* Putnam	Ill., Union Co.
1377	95	24566	*Microperca punctulata* Putnam	Ill., Calumet R.
1393	21	24656	*Catonotus fasciatus* Girard	N.Y., Grass R.
1801	1	24637	*Catonotus lineolatus* Agassiz	Ill., near Quincy
1801	1	24657	*Catonotus lineolatus* Agassiz	Ill., near Quincy
1811	37	24665	*Catonotus Kennicotti* Putnam	Ill., Union Co.
1865	237	24602	*Hyostoma Newmanii* Agassiz	Ala., Huntsville

later a regular catalog number. We have recorded both numbers. Some of these specimens are now at Stanford; many were transferred to the California Academy of Sciences. Later, some of the CAS types

were transferred to the University of Michigan. However, a number are still missing.

In addition to listing the type specimens, we have compiled a list of the genus-group names proposed for the darters. The original description for each was verified. We have attempted to discover the first subsequent selection of type-species for those nominal genera which lacked originally designated type-species. The list is divided into available and unavailable genus-group names.

To facilitate using this catalog, we have also compiled an alphabetical index of nominal forms, using the original spelling. The author and the genus in which the species was originally described follow the specific name. Abbreviations of museums presently housing type material of each form are given following the name. Museums with the holotype, lectotype, or most syntypes are listed first. A museum abbreviation with a question mark indicates where the types were probably originally deposited even though we could not locate them. A question mark indicates we could not locate any types and do not know where they might be. An "X" is used when there was no type material, or it is almost certainly lost.

We express our deep appreciation to the curators and staffs of the museums and collections which house the type material of the darters. Type material is or has been in the collections listed below. Collections marked with an asterisk have been visited by one or both of the authors (BBC, LWK). Other initials represent those who kindly verified material in a few collections, with small holdings of darter types, which we were unable to visit.

*ANSP Academy of Natural Sciences, Philadelphia. Dr. James E. Böhlke. [BBC, LWK.]

*BF U.S. Bureau of Fisheries. Collection now merged with USNM.

*BMNH British Museum (Natural History). Dr. P. H. Greenwood, Mr. Peter J. Whitehead. [BBC.]

*CAS California Academy of Sciences, San Francisco. Mr. W. I. Follett, Mrs. Lillian Dempster. [BBC, LWK.]

*CM Charleston Museum, S.C. Mr. E. Milby Burton. [BBC]

*CU Cornell University, Ithaca, N.Y. Dr. Edward C. Raney, Mr. Timothy Zorach, Mr. Robert E. Jenkins. [BBC, LWK.]

*DU Duke University, Durham, N.C. Dr. Joseph R. Bailey, Dr. Walter R. Courtenay, Jr. [BBC.]

*FMNH Field Museum of Natural History, Chicago. Mrs. Marion Grey, Miss Pearl Sonoda. [BBC, LWK.]

*INHS Illinois Natural History Survey, Urbana. Dr. Philip W. Smith [BBC, LWK.]

*ISC Iowa State University, Ames. Dr. Kenneth D. Carlander. Type darters transferred to USNM. [BBC.]

*IU Indiana University, Bloomington. Specimens now at CAS or UMMZ. [BBC, LWK.]

*KU Kansas University, Lawrence. Dr. Frank B. Cross. [LWK, BBC].

*MCZ	Museum of Comparative Zoology, Harvard. Dr. Giles W. Mead, Mrs. Myvanwy Dick. [BBC, LWK.]
*MNHN	Muséum National d'Histoire Naturelle, Paris. Mme. M. L. Bauchot. [LWK, BBC.]
*NCSM	North Carolina State Museum, Raleigh. Mr. William M. Palmer. Darter types transferred to USNM. [BBC, LWK.]
OAM–OSU	Oklahoma Agricultural and Mechanical College, now Oklahoma State University, Stillwater. Dr. Rudolph J. Miller. [RJM.]
*OSM	Ohio State Museum, Columbus. Dr. Milton B. Trautman. [BBC, LWK.]
*SU	Stanford University, Division of Systematic Biology. Dr. George S. Myers, Dr. Warren C. Freihofer, Mr. Stewart Springer. [BBC, LWK.]
TAMC	Texas Agricultural and Mechanical University, College Station. Dr. Richard J. Baldauf. [RJB.]
TNHC	Texas Natural History Collections, University of Texas, Austin. Dr. Clark Hubbs. [CH.]
TU	Tulane University, New Orleans. Dr. Royal D. Suttkus, Dr. John S. Ramsey. [JSR.]
*TUC	Tulsa University Collections. Dr. Albert P. Blair. Darter types transferred to USNM. [BBC.]
UAIC	University of Alabama Ichthyological Collections. Mr. William M. Howell. [WMH.]
UG	University of Georgia, Athens. Dr. Donald C. Scott. Darter types transferred to CU. [Dr. William Richards, LWK.]
*UMMZ	University of Michigan, Museum of Zoology, Ann Arbor. Dr. Reeve M. Bailey, Dr. Robert R. Miller. [BBC, LWK.]
UOMZ	University of Oklahoma, Museum of Zoology, Norman. Dr. Carl D. Riggs. [CDR.]
UR	University of Richmond, Richmond, Va. Dr. William S. Woolcott. [WSW.]
*USNM	U.S. National Museum, Washington. [BBC, LWK.]
UW	University of Wisconsin, Milwaukee. Dr. Carroll R. Norden. [CRN.]
VPI	Virginia Polytechnic Institute, Blacksburg. Dr. William S. Woolcott. [WSW.]

In addition to those already mentioned who have selected lectotypes or who have permitted us to examine material housed in their institutions, we wish to thank Drs. Robert H. Gibbs, Jr., James A. Peters, and W. Ralph Taylor of the U.S. National Museum, for critically commenting upon the manuscript.

Available Genus-Group Names

Allohistium Bailey *in* Bailey and Gosline, 1955, Misc. Publ. Mus. Zool. Univ. Michigan, no. 93, p. 6. Type-species *Etheostoma cinerea* Storer, 1845, by original designation.

Alvordius Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 68. Type-species *Alvordius maculatus* Girard, 1859, by monotypy.

Ammocrypta Jordan, 1877, U.S. Nat. Mus. Bull. 10, p. 5. Type-species *Ammocrypta beanii* Jordan, 1877, by original designation.

Anemoces Jordan, 1929, Manual of Vertebrates, 13th ed., p. 156. Type-species *Ulocentra gilberti* Evermann and Thoburn *in* Jordan and Evermann, 1896, by original designation.

Arlina Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 64. Type-species *Arlina effulgens* Girard, 1859 (=*Etheostoma olmstedi* Storer, 1842), by monotypy.

Asproperca Heckel *in* Canestrini, 1860, Verh. Zool.-Bot. Wien, vol. 10, p. 311. Type-species "*Asproperca zebra* Heck." (=*Pileoma zebra* Agassiz, 1850), by monotypy.

Astatichthys Vaillant, 1873, Nouv. Arch. Mus. Hist. Nat. Paris, vol. 9, p. 106. Type-species *Etheostoma caeruleum* Storer, 1845, by original designation.

Austroperca Hubbs, 1936, Occ. Pap. Mus. Zool. Univ. Michigan, no. 341, p. 1. A replacement name for *Torrentaria* Jordan and Evermann, 1896, preoccupied by *Torrentaria* (Hodgson MS) Gray, 1863, Aves. Takes the same type-species as *Torrentaria* Jordan and Evermann, *Etheostoma australe* Jordan, 1884.

Belophlox Fowler, 1947, Not. Nat. Acad. Nat. Sci. Philadelphia, no. 191, p. 1. Type-species *Belophlox mariae* Fowler, 1947, by original designation.

Boleichthys Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 103. Type-species *Boleichthys exilis* Girard, 1859, by original designation.

Boleosoma DeKay, 1842, Nat. Hist. New York Zool., vol. 4, p. 20. Type-species *Boleosoma tessellatum* DeKay, 1842 (=*Etheostoma olmstedi* Storer), by monotypy.

Catonotus Agassiz, 1854, Amer. Journ. Sci. and Arts, vol. 17, p. 305. Type-species *Catonotus lineolatus* Agassiz, 1854 (=*Etheostoma flabellaris* Rafinesque, 1819), by monotypy.

Claricola Jordan and Evermann, 1896, U.S. Nat. Mus. Bull. 47, p. 1093. Type-species *Etheostoma juliae* Meek, 1891, by original designation.

Copelandellus Jordan and Evermann, 1896, U.S. Nat. Mus. Bull. 47, p. 1100. Type-species *Poecilichthys quiescens* Jordan, 1884 (= *Boleosoma fusiforme* Girard, 1854), by original designation.

Cottogaster Putnam, 1863, Bull. Mus. Comp. Zool., vol. 1, p. 4 Type-species *Boleosoma tessellatum* Thompson, 1853, not of DeKay (= *Rheocrypta copelandi* Jordan, 1877), by monotypy.

Crystallaria Jordan and Gilbert *in* Jordan 1885, Ann. Rep. Comm. Fish and Fish. for 1885, p. 866. Type-species *Pleurolepis asprellus* Jordan, 1878, by original designation.

Diplesion Rafinesque, 1820, Ichthyologia Ohiensis, p. 37. Type-species *Etheostoma blennioides* Rafinesque, 1819, by subsequent designation of Girard, 1859, p. 101 and Jordan and Gilbert, 1877, p. 86.

Doration Jordan, 1929, Manual of the Vertebrates, 13th ed., p. 156. Type-species *Boleosoma stigmaeum* Jordan, 1877, by original designation.

Ericosma Jordan, 1877, U.S. Nat. Mus. Bull. 10, p. 8. Type-species *Alvordius evides* Jordan and Copeland, 1877, by original designation.

Estrella Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 65. Type-species *Estrella atromaculata* Girard, 1859 (=*Etheostoma olmstedi* Storer, 1842), by monotypy.

Etheostoma Rafinesque, 1819, Journ. Phys., Chim., Hist. Nat., vol. 88, p. 419. Type-species *Etheostoma blennioides* Rafinesque, 1819, by subsequent designation of Agassiz (1854, p. 305). Verified by Opinion 14, Int. Comm. Zool. Nomen., 1910, Smithsonian Inst. Publ., 1938, pp. 25–27. Not *Etheostoma flabellaris* Rafinesque, 1819, as designated by Jordan and Gilbert, 1877, p. 85.

Hadropterus Agassiz, 1854, Amer. Journ. Sci. and Arts, vol. 17, p. 305. Type-species *Hadropterus nigrofasciatus* Agassiz, 1854, by monotypy.

Hololepis Agassiz *in* Putnam, 1863. Bull. Mus. Comp. Zool., vol. 1, p. 4. Type-species *Boleosoma Barratti* Holbrook, 1885 (=*Boleosoma fusiforme* Girard, 1854), by subsequent designation of Jordan and Gilbert, 1877, p. 93.

Hyostoma Agassiz, 1854, Amer. Journ. Sci. and Arts, vol. 17, p. 305. Type-species *Hyostoma Newmanii* Agassiz, 1854 (=*Etheostoma blennioides* Rafinesque, 1819), by monotypy.

Hypohomus Cope, 1870, Proc. Amer. Philos. Soc., vol. 11, p. 449. Type-species *Cottogaster aurantiacus* Cope, 1869, by monotypy.

Imostoma Jordan, 1877, Proc. Acad. Nat. Sci. Philadelphia, vol. 29, p. 49. Type-species *Hadropterus shumardi* Girard, 1859, by original designation.

Ioa Jordan and Brayton, 1878, U.S. Nat. Mus. Bull. 12, p. 88. Type-species *Poecilichthys vitreus* Cope, 1870, by original designation.

Litocara Bailey, 1948, Copeia, 1948, p. 79. Type-species *Poecilichthys sagitta* Jordan and Swain, 1883, by original designation.

Microperca Putnam, 1863, Bull. Mus. Comp. Zool., vol. 1, p. 4. Type-species *Microperca punctulata* Putnam, 1863 (=*Etheostoma microperca* Jordan and Gilbert, *in* Jordan 1888), by monotypy.

Nanostoma Putnam *in* Jordan, 1877, U.S. Nat. Mus. Bull. 10, p. 6. Type-species *Poecilichthys zonalis* Cope, 1868, by original designation.

Niviperca Whitley, 1951, Proc. Royal Zool. Soc. New South Wales, 1949–50, p. 68. A replacement name for *Nivicola* Jordan and Evermann preoccupied by *Nivicola* Hodgson, 1844, Aves. Takes the same type-species as *Nivicola* Jordan and Evermann, *Poecilichthys borealis* Jordan, 1844 (=*Boleichthys exilis* Girard, 1859).

Nothonotus Agassiz *in* Putnam, 1863, Bull. Mus. Comp. Zool., vol. 1, p. 3. Type-species *Etheostoma maculatum* Kirtland, 1840, by subsequent designation of Jordan and Gilbert 1877, p. 93.

Oligocephalus Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 67. Type-species *Boleosoma lepida* Baird and Girard, 1853, by subsequent designation of Vaillant (1873, p. 90).

Percina Haldeman, 1842, Journ. Acad. Nat. Sci. Philadelphia, vol. 8, p. 330. Type-species *Perca nebulosa* Haldeman, 1842 (=*Sciaena caprodes* Rafinesque, 1818), by monotypy.

Pileoma DeKay, 1842, Nat. Hist. New York Zool., vol. 1, pt. 4, p. 16. Type-species *Pileoma semifasciata* DeKay, 1842 (=*Sciaena caprodes* Rafinesque, 1818), by monotypy.

Plesioperca Vaillant, 1873, Nouv. Arch. Mus. Hist. Nat. Paris, vol. 9, p. 36. Type-species *Plesioperca anceps* Vaillant, 1873 (=*Hadropterus nigrofasciatus* Agassiz, 1854), by monotypy.

Poecilichthys Agassiz, 1854, Amer. Journ. Sci. and Arts, vol. 7, p. 304. A replacement name for *Poecilosoma* Agassiz, 1850, preoccupied by *Poecilosoma* Huebner, 1819, Lepidoptera; *Poecilosoma* Stephens 1829, Hemiptera; *Poecilosoma* Newman, 1838, Coleoptera. Takes the same type-species as *Poecilosoma* Agassiz, *Etheostoma variatum* Kirtland, 1838.

Psychromaster Jordan and Evermann, 1896, U.S. Nat. Mus. Bull. 47, p. 1099. Type-species *Etheostoma tuscumbia* Gilbert and Swain, 1887, by original designation.

Rafinesquiellus Jordan and Evermann, 1896, U.S. Nat. Mus. Bull. 47, p. 1082. Type-species *Aplesion pottsii* Girard 1859, by original designation.

Rheocrypta Jordan, 1877, U.S. Nat. Mus. Bull. 10, p. 9. Type-species *Rheocrypta copelandi* Jordan, 1877, by monotypy.

Rhothoeca Jordan, 1885, Ann. Rept. Comm. Fish and Fish. for 1885, p. 868. Substitute name for *Nanostoma* Putnam erroneously regarded as preoccupied by *Nannostomus* Günther and taking the same type-species *Poecilichthys zonalis* Cope, 1869.

Richiella Coker, 1927, Copeia, no. 162, p. 18. Substitute name for *Richia* Coker preoccupied by *Richia* Grote, 1887, Lepidoptera. Takes the same type-species as *Richia* Coker, *Richia brevispina* Coker, 1926 (=*Etheostoma flabellaris* Rafinesque, 1819).

Serraria Gilbert, 1884, Proc. U.S. Nat. Mus. vol. 7, p. 205. Type-species *Hadropterus scierus* Swain, 1883, by original designation.

Swainia Jordan and Evermann, 1896, U.S. Nat. Mus. Bull. 47, p. 1040. Type-species *Etheostoma squamatus* Gilbert and Swain, 1887, by original designation.

Ulocentra Jordan, 1878, Manual of Vertebrates, 2nd ed., p. 223. Type-species *Arlina atripinnis* Jordan, 1877, by monotypy.

Vaillantia Jordan *in* Jordan and Brayton, 1878, U.S. Nat. Mus. Bull. 12, p. 89. Type-species *Boleosoma camurum* Forbes, 1878 (=*Vaillantia chlorosomum* Hay, 1880), by original designation.

Vigil Jordan, 1919, Proc. Acad. Nat. Sci. Philadelphia, vol. 70, p. 344. Substitute name for *Pleurolepis* Agassiz, 1863, preoccupied by *Pleurolepis* Quenstedt, 1852, Pisces. Takes the same type-species as *Pleurolepis* Agassiz, *Pleurolepis pellucidus* Agassiz *in* Putnam, 1863.

Villora Hubbs and Cannon, 1935, Misc. Publ. Univ. Michigan Mus. Zool., no. 30, p. 11. Type-species *Villora edwini* Hubbs and Cannon, 1935, by original designation.

Unavailable Genus-Group Names

Nivicola Jordan and Evermann, 1896, U.S. Nat. Mus. Bull. 47, p. 1082. Type-species *Poecilichthys borealis* Jordan 1884, (=*Boleichthys exilis* Girard, 1859), by original designation; preoccupied by *Nivicola* Hodgson, 1844, Aves.

Pleurolepis Agassiz *in* Putnam, 1863, Bull. Mus. Comp. Zool., vol. 1, p. 5. Type-species *Pleurolepis pellucidus* Agassiz *in* Putnam, 1863, by monotypy; preoccupied by *Pleurolepis* Quenstedt, 1852, Semionotidae.

Poecilisoma Agassiz, 1850, Lake Superior, p. 299. Type-species *Etheostoma variata* Kirtland, 1838, by subsequent designation of Agassiz, 1854, p. 306. Name preoccupied by *Poecilosoma* Huebner, 1819, Lepidoptera; *Poecilosoma* Stephens, 1829, Hemiptera; and *Poecilosoma* Newman, 1838, Coleoptera.

Richia Coker, 1926, Bull. Bur. Fish., vol. 42, p. 106. Type-species *Richia brevispina* Coker, 1926 (=*Etheostoma flabellaris* Rafinesque, 1819), by original designation; preoccupied by *Richia* Grote, 1887, Lepidoptera.

Torrentaria Jordan and Evermann, 1896, U.S. Nat. Mus. Bull. 47, p. 1080. Type-species *Etheostoma australe* Jordan, 1884, by original designation; preoccupied by *Torrentaria* (Hodgson MS) Gray, 1863, Aves.

Nominal Species

Alvarius fonticola Jordan and Gilbert, 1886, Proc. U.S. Nat. Mus., vol. 9, p. 23. Redescribed in more detail as "*Etheostoma* (*Alvarius*) *fonticola* Jordan and Gilbert, sp. nov." in Gilbert (1887, p. 63).

Lectotype: USNM 36523 (♂, 27), Texas, San Marcos R. at San Marcos; D. S. Jordan and C. H. Gilbert; September 1884; figured in Jordan and Evermann (1900, fig. 470); herein selected. D VII–10; A I, 6; LL 2+30=32; INF 3+1; POM 8; supratemporal canal interrupted; nape, cheeks, and breast naked; breeding tubercles on posterior anal rays.

Paralectotypes: USNM 198004 (3, 21–24), removed from USNM 36523.

=*Etheostoma* (*Microperca*) *fonticola* (Jordan and Gilbert).

Alvordius aspro Cope and Jordan *in* Jordan, 1877, Proc. Acad. Nat. Sci. Philadelphia, vol. 29, p. 51, based on the figure but not the description of "*Etheostoma blennioides*" in Kirtland, 1841, Boston Journ. Nat. Hist., p. 3, pl. 6, fig. 1.

Types: This name was proposed as "*Alvordius aspro*, Cope and Jordan, nom. sp. nov.," a replacement name for *Etheostoma blennioides* of Kirtland's figure. However, the name clearly applies to a new species based on Kirtland's misidentified figure. Cope and Jordan did not provide any description, did not mention any localities, and gave no indication of having any material before them. Therefore, the type of *A. aspro* must be the specimen from the Mahoning River, Ohio, from which Kirtland drew his figure. We have not been able to locate this specimen. However, there are two specimens collected by Jordan from the White River in Indiana. One, labeled "paratype," is USNM 20137, and the other, labeled "cotype," is BMNH 1880.1.21.84. In the same year that *A. aspro* was described, Jordan (1877, p. 375) listed *A. aspro* as "frequent" in collections made by Copeland and Jordan in the White River around Indianapolis. The USNM and BMNH specimens should not be considered as type material because the original description was based only on the references to Kirtland's figure.

=*Percina* (*Alvordius*) *maculata* (Girard).

Alvordius crassus Jordan and Brayton, 1878, U.S. Nat. Mus. Bull. 12(A), p. 12.

Lectotype: USNM 23459 (♂, 63), South Carolina, Saluda R., near Greenville; D. S. Jordan and A. B. Brayton; summer, 1877; labeled "drawn"; herein selected by Dr. Edward C. Raney. D XII–13; A II,10; LL 54, complete; cheeks and anterior portion of nape naked;

breast with one enlarged scale; another enlarged scale between pelvic fin bases; opercle covered with scales.

Paralectotypes: USNM 31111 (3, 46–50), same data as lectotype.

=*Percina* (*Ericosma*) *crassa crassa* (Jordan and Brayton).

Alvordius evides Jordan and Copeland *in* Jordan, 1877, Proc. Acad. Nat. Sci. Philadelphia, vol. 29, p. 51.

Lectotype: USNM 17872 (♂, 45), Indiana, Marion Co., White R., near Indianapolis; D. S. Jordan; 1874; herein selected. D XII–13; A II,9; LL 64; INF 8; POM 10; cheeks with a small patch of scales under junction of lateral and infraorbital canals; opercles scaly; nape with scattered scales; breast naked except for one modified scale at center; subocular bar present.

Paralectotypes?: MCZ 24399 (2 ♂, 42–46), same locality as lectotype. We are not certain that MCZ 24399 contains the other two syntypes on which the original description was based.

The original description was based on three specimens. Jordan and Copeland (in Jordan, 1877, p. 8) utilized additional specimens when they described *Ericosma* to contain the previously described *A. evides*. These additional specimens were incorrectly labeled as types: USNM 20119, MCZ 35957, and BMNH 1880.1.21.12–14.

=*Percina* (*Ericosma*) *evides* (Jordan and Copeland).

Alvordius maculatus Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 68.

Syntypes: USNM 1346 (2, ?), Fort Gratiot on Lake Huron; Maj. B. Alvord; listed as thrown away in USNM catalog and we have been unable to find them.

=*Percina* (*Alvordius*) *maculata* (Girard).

Ammocrypta beanii Jordan, 1877, U.S. Nat. Mus. Bull. 10, p. 5.

Holotype: USNM 17833 (♂, 52), Louisiana, Notalbany R., near Tickfaw; T. H. Bean; December 1876.

=*Ammocrypta* (*Ammocrypta*) *beanii* Jordan.

Ammocrypta clara Jordan and Meek, 1885, Proc. U.S. Nat. Mus., vol. 8, p. 8.

Lectotype: USNM 35828 (1, 42), Iowa, Des Moines R. at Ottumwa; D. S. Jordan and S. E. Meek; August 1884. Jordan and Evermann (1896, p. 1063) listed USNM 35828, then containing four specimens, as "type." Linder (1959) selected one specimen as lectotype and removed the other three.

Paralectotypes: USNM 164166 (3, 33–51), out of USNM 35828. Linder overlooked paralectotypes SU 1500 (1, 46) and UMMZ 187510 (2, disintegrated), orig. IU 753, then IU 7323, that are also from the original type series.

The original description was based on the Ottumwa specimens and is followed by "specimens were *also* obtained in Red River at Fulton, Arkansas, and in the Sabine River at Longview, Texas" (italics ours). The Sabine River specimens (USNM 36488) and the Red River specimens (USNM 36337) were labeled paratypes in the USNM collection, but we do not feel they should be considered as such because they are listed in the fashion of "other material."

=*Ammocrypta* (*Ammocrypta*) *clara* Jordan and Meek. See Linder (1959).

Ammocrypta gelida Hay, 1881, Proc. U.S. Nat. Mus., vol. 3, p. 490.

Syntypes: USNM 27425 (2, 44–45), Mississippi, Clarke Co., Chickasawha R. at Enterprise; O. P. Hay; March–April 1880.

=*Ammocrypta* (*Ammocrypta*) *beanii* Jordan.

Ammocrypta vivax Hay, 1883, Bull. U.S. Fish Comm., vol. 2, p. 58.

Holotype: USNM 32213 (1, 39), Mississippi, Pearl R. at Jackson; O. P. Hay; summer, 1881.

=*Ammocrypta* (*Ammocrypta*) *vivax* Hay.

Aplesion potsii Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 102; *potsii* a misprint for *pottsii*.

Holotype: MCZ 1179 (1, 50), Mexico, Chihuahua R. and tribs.; J. Potts; orig. USNM 1179.

=*Etheostoma* (*Oligocephalus*) *pottsii* (Girard).

Arlina atripinnis Jordan, 1877, U.S. Nat. Mus. Bull. 10, p. 10.

Holotype: USNM 20483 (♂, 56), Tennessee, trib. of Cumberland R., near Nashville; A. Winchell; in poor condition; frenum present, dorsal fin pattern clearly that of *Ulocentra*.

=*Etheostoma* (*Ulocentra*) *atripinne* (Jordan).

Arlina effulgens Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 65.

Holotype: USNM 1253 (♂, 56), Washington, D.C., Rock Cr., trib. of Potomac R.; S. F. Baird; 1851.

=*Etheostoma* (*Boleosoma*) *olmstedi olmstedi* Storer. See Cole (1958).

Belophlox mariae Fowler, 1947, Notulae Naturae, no. 191, fig. 1.

Holotype: ANSP 71731 (♂, 55), North Carolina, Moore Co., trib. of outlet of Watson's Lake, about 3 mi. W. of Southern Pines, Little Pee Dee drainage; H. W. Fowler; Oct. 12, 1946.

=*Etheostoma* (*Oligocephalus*) *mariae* (Fowler).

Boleichthys elegans Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 104.

Syntypes: MCZ 24567 (2, 35–40), Texas, Piedrapainte; J. H. Clark under Col. J. D. Graham; U.S. and Mexican Boundary Survey;

orig. USNM 745, then MCZ 84. The USNM catalog gives four for the number of specimens in USNM 745, but we have been unable to find any types other than MCZ 24567.

=*Etheostoma* (*Oligocephalus*) *grahami* (Girard).

Boleichthys eos Jordan *in* Nelson, 1876, Bull. Illinois Mus. Nat. Hist., no. 1, p. 35. Redescribed in more detail as "*Boleichthys eos*, Jordan and Copeland, n. s." *in* Jordan (1877, p. 46).

Syntypes: USNM 23460 (1, 42), Indiana, La Porte Co., Clear Lake; Jordan; summer, 1875. USNM 17848 (9, 27–42), Indiana, Wabash R.; Jordan. USNM 20117 (1, 34), Indiana, Wabash R.; Jordan; in very poor condition.

=*Etheostoma* (*Oligocephalus*) *exile* (Girard). See Hubbs (1926, p. 67).

Boleichthys exilis Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 103.

Syntypes: USNM 1336 (24, 23–33), North Dakota, Little Muddy R., trib. of upper Missouri R.; G. C. Suckley. MCZ 24728 (6, 27–33), same data, all but the largest in poor condition; orig. USNM 1336, then MCZ 114. UMMZ 86492 (1, 31) out of MCZ 24728.

=*Etheostoma* (*Oligocephalus*) *exile* (Girard). See Hubbs (1926. pp. 64–68).

Boleichthys warreni Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 104.

Holotype: MCZ 32952 (1, 42), North Dakota, Cannon Ball R., Hayden under Lt. G. K. Warren, exploration of the upper Missouri and Yellowstone; September 1856. The USNM catalog lists USNM 1327 as the type of *B. warreni*, but we have been unable to find a jar bearing this number. Jordan (1885, p. 869) and Hubbs (1926) wrote that the type was lost. The original description was based on only one specimen, and MCZ 32952 fits it very well.

=*Etheostoma* (*Oligocephalus*) *exile* (Girard). See Jordan (1885) and Hubbs (1926, p. 67).

Boleichthys whipplii Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 103.

Syntypes: MCZ 24569 (1, 39), "Ark.," Coal Cr. [=trib. of Arkansas R. in E. Oklahoma, Hubbs and Black, 1941]; party under Lt. A. W. Whipple, Pacific Railroad Survey, orig. USNM 1333, then MCZ 41. USNM 1333 is listed in USNM catalog as containing two specimens, but we have been able to find only the specimen now cataloged as MCZ 24569.

=*Etheostoma* (*Oligocephalus*) *whipplii whipplii* (Girard). See Hubbs and Black (1941).

Boleosoma aesopus Cope, 1870, Proc. Amer. Philos. Soc., vol. 11, p. 270.

Syntypes: ANSP ?, Pennsylvania, Lycoming Co., Loyalsoc [now Loyalsock] Cr. in the Allegheny region; A. H. Smith. Types of other species described by Cope in this paper were deposited at ANSP, but Fowler (1907) did not mention types of this form, and we have not found them.

=*Etheostoma* (*Boleosoma*) *olmstedi olmstedi* Storer.

Boleosoma Barratti Holbrook, 1855, Journ. Acad. Nat. Sci. Philadelphia, ser. 3, vol. 2, p. 56, pl. 6, fig. 3.

Lectotype: MCZ 24571 (♂, 46), Florida, Holbrook; orig. MCZ 97; herein selected. D X–10; A II, 7; LL 26+24=50; INF 3+1; POM 9; interorbital, breast, and cheeks scaly.

Paralectotypes: MCZ 43090 (4, 37–40) and UMMZ 36598 (♂, 47), removed from MCZ 24571.

=*Etheostoma* (*Hololepis*) *fusiforme barratti* (Holbrook). See Hubbs and Cannon (1935) and Collette (1962).

Boleosoma camurum Forbes *in* Jordan, 1878, Bull. Illinois State Lab. Nat. Hist., vol. 1, no. 2, p. 40.

Syntypes: USNM 27894 (2 ♀, 39), Illinois, Peoria Lake; S. A. Forbes; Oct. 27, 1878. SU 1683 (♀, 44), Illinois. USNM 23455 (♀, 44), Illinois, Illinois R., figured in Jordan and Evermann (1898, fig. 452). MCZ 25053 (♀, 38), Illlinois, Peoria Lake. UMMZ 187505 (1, 39), Illinois, Pekin, orig. IU 506, then IU 4707. There were originally additional syntypes from "Cache R. and Clear Cr., Union Co.; Johnson Co." according to the original description, but we have not been able to locate them. Smith and Bridges (1960) reported that there were no syntypes in the collection of the Illinois Natural History Survey which inherited much of the material of the old Illinois State Laboratory of Natural History.

=*Etheostoma* (*Boleosoma*) *chlorosomum* (Hay) because *camurum* Forbes is preoccupied in *Etheostoma* by *Poecilichthys camurus* Cope.

Boleosoma fusiforme Girard, 1854, Proc. Boston. Soc. Nat. Hist., vol. 5, p. 41.

Lectotype: USNM 1188 (♀, 33), Massachusetts, trib. of Charles R. at Framingham; S. F. Baird; selected by Hubbs and Cannon (1935, p. 78).

Paralectotypes: USNM 94686 (25, 23–36); MCZ 24589 (4, 27–36); orig. USNM 1188, then MCZ 101. UMMZ 86582 (1, 37); out of MCZ 24589.

=*Etheostoma* (*Hololepis*) *fusiforme fusiforme* (Girard). See Hubbs and Cannon (1935) and Collette (1962).

Boleosoma gracile Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, 1859, p. 103.

Lectotype: USNM 1328 (♂, 35), Texas, Río Seco near Ft. Inge; C. B. Kennerly; selected by Hubbs and Cannon (1935, p. 44).

Paralectotypes: MCZ 113 (1, 36), orig. USNM 1328. USNM 1329 (1, 30), Texas, Río Leona near Ft. Inge; Kennerly.

=*Etheostoma* (*Hololepis*) *gracile* (Girard). See Hubbs and Cannon (1935) and Collette (1962).

Boleosoma lepida Baird and Girard, 1853, Proc. Acad. Nat. Sci. Philadelphia, vol. 6, p. 388.

Syntypes: USNM 744 (6, 32–45), Texas, Río Leona at Uvalde, trib. of Nueces R.; J. H. Clark. MCZ 24575 (3, 42–46), same data; orig. USNM 744, then MCZ 82. UMMZ 86335 (1, 41), out of MCZ 24575.

=*Etheostoma* (*Oligocephalus*) *lepidum* (Baird and Girard).

Boleosoma maculaticeps Cope, 1870, Proc. Amer. Philos. Soc., vol. 11, p. 269.

Lectotype: ANSP 13862 (♂, 45), North Carolina, upper waters of Catawba R.; E. D. Cope; selected and illustrated by Fowler (1907, p. 523, fig. 6). All 15 syntypes were still in the same bottle. The next to the largest specimen is closest (55.4 mm.) in total length to the size indicated by Fowler for the "type" (57.0 mm.), and it has the correct number of fin rays: D IX–13; A II,8. These are also the counts given by Cope in the original description. The lectotype has 43 lateral line scales, close to Fowler's figure which has about 45. This specimen herein confirmed as lectotype. INF 8; POM 10; pectoral rays 12–12.

Paralectotypes: ANSP 13863–76 (14, 23–48), same data as lectotype.

=*Etheostoma* (*Boleosoma*) *nigrum maculaticeps* (Cope). See Cole (1958).

Boleosoma maculatum Agassiz, 1850, Lake Superior, p. 305, pl. 4, fig. 3.

Lectotype: USNM 1840 (♂, 43), Ontario, Lake Superior, Ft. William and "the Pic" at the mouth of the Pic R.; L. Agassiz and party; July 13–20, 1848; herein selected by Dr. Charles F. Cole. D IX–13; A I,8; pectoral 12–13; LL 45+3=48; infraorbital pores 4+2; nape, cheeks, and breast naked; opercles partially scaled.

Paralectotype: USNM 197633 (♀, 41), removed from USNM 1840.

=*Etheostoma* (*Boleosoma*) *nigrum nigrum* Rafinesque.

Boleosoma mutatum Vaillant, 1873, Nouv. Arch. Mus. Hist. Nat. Paris, p. 88, a substitute name for *Boleosoma maculatum* Agassiz erroneously thought by Vaillant to be preoccupied in *Boleosoma* by *Etheostoma maculatum* Kirtland.

Types: The types of *B. mutatum* are the same as those of *Boleosoma maculatum* Agassiz.

=*Etheostoma* (*Boleosoma*) *nigrum nigrum* Rafinesque.

Boleosoma nigrum eulepis Hubbs and Greene, 1935, Trans. Wisconsin Acad. Sci., Arts, Lett., vol. 29, p. 96, pl. 3, figs. 1–3.

Holotype: UMMZ 77225 (1, 45), Wisconsin, Dodge Co., trib. of West Branch Rock R., 2 mi. N. of Atwater; C. W. Greene, Stuart, Creaser, and Griffin; Aug. 27, 1927.

Paratypes: UMMZ 100771 (79, 26–47), out of UMMZ 77225. USNM 74927 (2, 33–53), Wisconsin, Turtle Cr. at Delavan; N. Hollister; Oct. 11, 1910. USNM 117505 (3, 45–46), Wisconsin, Marquette Co., Welsh Cr.; Greene and H. S. Jones; Sept. 1, 1925; orig. UMMZ 73880. UMMZ 101528 (9, 25–52), Iowa, Dickinson Co., Spirit L.; J. C. Salyer; July 27, 1932. UMMZ 94832 (22, 26–48), Minnesota, Mississippi R. between Cass L. and Bemidji; Hubbs and Schultz; June 5, 1926. UMMZ 66681 (9, 24–28), Minnesota, Hubbard Co., L. Laselle and outlet; P. A. Moody; Aug. 11, 1925. UW 64 (17, 24–40), Wisconsin, Columbia Co.; Sand (Rock) Cr.; Greene and Jones; Aug. 18, 1925. UW 466 (5, 19–37), Wisconsin, Rock Co., Yahara R. at Indian Ford; G. Wagner; June 23, 1906. UW 467 (2, 40–41), Wisconsin, Walworth Co.; Geneva L.; Wagner; June 26, 1906. UW 473 (22, 24–59), Wisconsin; Manitowoc Co., Mud Cr. at Reedville; Wagner; July 17, 1906. UW 474 (18, 25–31), Wisconsin, Calumet Co., cr. at Brillion; Wagner; July 18, 1906. UW 479 (2, 38–43), Wisconsin, Vilas Co., Trout Lake Cr.; Wagner; July 10, 1907. UW 480 (3, 44–48), Wisconsin, Oneida Co., cr. between Squirrel L. and Diamond L.; Wagner; July 20, 1907.

The following paratypes are all UMMZ specimens from Wisconsin: 72370 (13, 29–54), Polk Co., Apple R., 2 mi. W. of Turtle L. on rt. 14; P. Okkelberg; Aug. 26, 1928. 72382 (13, 23–48), same data. 72414 (60, 25–57), Vilas Co., SE. side of Big Arbor Vitae L.; Metzelaar and Langlois; Sept. 19, 1925. 72447 (9, 36–50), Oneida Co., Kamaguesaga L., W. of Minoigua; Metzelaar and Langlois; Sept. 20, 1925. 72467 (2, 32–37), Vilas Co., Trout L.; Metzelaar and Langlois; Sept. 20, 1925. 72495 (14, 39–53), Vilas Co., Little Arbor Vitae L.; Metzelaar and Langlois; Sept. 21, 1925. 72502 (18, 32–52), Vilas Co., St. Germain L.; Metzelaar and Langlois; Sept. 21, 1925. 73442 (15, 30–49), Columbia Co., Fox R., 10 mi. E. of Portage on rt. 33; Greene and Jones; Aug. 18, 1925. 73458 (1, 42), Columbia Co., French Cr., below dam; Greene and Jones; Aug. 19, 1925. 73464 (35, 32–56), Columbia Co., French Cr., 1 mi. above mill pond; Greene and Jones; Aug. 19, 1925. 73472 (4, 46–56), Columbia Co., Spring Branch Cr., above co. rd.; Greene and Jones; Aug. 19, 1925. 73475 (3, 48–53), same data. 73563 (11, 31–51), Marquette Co., trib. of

Neenah Cr., 1.5 mi. from Neenah Cr.; Greene and Jones; Aug. 21, 1925. 73571 (5, 37–47), Columbia Co., outlet of Spring L., Pardeeville; Greene and Jones; Aug. 22, 1925. 73579 (28, 23–48), Columbia Co., old channel, below Park L. Dam; Greene and Jones; Aug. 22, 1925. 73586 (11, 34–45), Columbia Co., Park L.; Greene and Jones; Aug. 22, 1925. 73627 (89, 27–55), Marquette Co., Neenah Cr., 2 mi. NE. of Briggsville on rt. 23; Greene and Jones; Aug. 24, 1925. 73640 (2, 40–41), Columbia Co., trib. of Neenah Cr., 6 mi. E. of Briggsville; Greene and Jones; Aug. 24, 1925. 73670 (66, 30–48), Marquette Co., Belle Fountaine Cr., 4 mi. N. of Dalton; Greene and Jones; Aug. 25, 1925. 73683 (11, 31–49), Columbia Co., Neenah Cr., near mouth; Greene and Jones; Aug. 26, 1925. 73693 (33, 30–44), Columbia Co., French Cr. at mouth; Greene and Jones; Aug. 26, 1925. 73706 (7, 32–41), Columbia Co., Fox R., below mouth of French Cr.; Greene and Jones; Aug. 26, 1925. 73728 (4, 33–47), Columbia Co., Fox R., opposite Lock 25; Greene and Jones; Aug. 26, 1925. 73735 (6, 41–55), Columbia Co., Fox R. at Portage; Greene and Jones; Aug. 26, 1925. 73744 (47, 28–45), Fond du Lac Co., Grand R., above Fairwater Millpond; Greene and Jones; Aug. 5, 1925. 73810 (14, 34–49), Green Lake Co., Grand R., below Kingston Dam; Greene and Jones; Aug. 29, 1925. 73821 (4, 40–47), Greene Lake Co., Grand R. at Kingston; Greene and Jones; Aug. 29, 1925. 73831 (5, 27–44), Green Lake Co., trib. of Grand R., 4 mi. SW. of Uthey; Greene and Jones; Aug. 31, 1925. 73835 (85, 31–51), Fond du Lac Co., trib. of Grand R., 2 mi. S. of Fairwater; Greene and Jones; Aug. 31, 1925. 73862 (30, 39–51), Green Lake Co., Grand R., 3 mi. S. of Marquette; Greene and Jones; Sept. 1, 1925. 73874 (26, 27–48), Marquette Co., trib. of Grand R., 2 mi. W. of Kingston; Greene and Jones; Sept. 1, 1925. 73877 (8, 38–51), Marquette Co., trib. of Grand R., 1.5 mi. S. of Welsh Cr.; Greene and Jones; Sept. 1, 1925. 73888 (57, 28–55), Marquette Co., trib. of Grand R., Welsh Cr.; Greene and Jones; Sept. 1, 1925. 73955 (34, 26–54), Fond du Lac Co., Rush Cr., near Waupun; Greene and Cuchio; July 4, 1926. 77054 (33, 25–53), Columbia Co., Crawfish R., 2 mi. NW. of Fall R.; Greene and Stuart; Aug. 21, 1927. 77073 (35, 30–48), Dodge Co., Beaver Dam Cr., 5 mi. S. of Beaver Dam; Greene and Stuart; Aug. 21, 1927. 77082 (18, 32–53), Columbia Co., trib. of Crawfish R., 4 mi. NW. of Columbus; Greene and Stuart; Aug. 21, 1927. 77088 (15, 28–44), Columbia Co., trib. of Crawfish R. just N. of Columbus on rt. 16; Greene and Stuart; Aug. 22, 1927. 77096 (3, 33–40), Columbia Co., Crawfish R. at Columbus; Greene and Stuart; Aug. 22, 1927. 77110 (5, 32–39), Dodge Co., trib. of Crawfish R., 10 mi. W. of Watertown on rt. 19; Greene and Stuart; Aug. 23, 1927. 77125 (8, 31–46), Dodge Co., trib. of Beaver Dam Cr., 2 mi. E. of Lowell on rt. 16; Greene and

Stuart; Aug. 23, 1927. 77135 (6, 28–39), Dodge Co., W. Branch of Rock R., above millpond at Hustisford; Greene and Stuart; Aug. 27, 1927. 77153 (2, 37–41), Dodge Co., Beaver Dam Cr., below dam at Fox L.; Greene and Stuart; Aug. 26, 1927. 77165 (11, 32–45), Dodge Co., Crawfish R., 8 mi. N. of Watertown; Greene and Stuart; Aug. 26, 1927. 77208 (22, 27–44), Dodge Co., Old Mill Cr., 1 mi. S. of Atwater; Greene, Stuart, Creaser, Griffin; Aug. 27, 1927. 77232 (44, 25–49), Fond du Lac Co., W. Fk. of Upper W. Br. of Rock R., 4 mi. NW. of Waupun; Greene, Stuart, Creaser, Griffin; Aug. 29, 1927. 77592 (32, 21–44), Jefferson Co., Rock R., below Ft. Atkinson; Schultz and Tarzwell; Aug. 7, 1928. 77779 (30, 26–56), St. Croix Co., Apple R., above Somerset; Schultz and Tarzwell; Aug. 11, 1928. 78384 (6, 24–40), Rock Co., Rock R., 2.5 mi. N. of Beloit; Schultz and Tarzwell; Aug. 27, 1928. 78415 (43, 24–37), same data. 95933 (3, 26–49), Sawyer Co., Grindstone L., 10 mi. SE. of Haywood; Creaser and Jones; Sept. 2, 1928. 96111 (9, 24–48), Washburn Co., Trough L., 14 mi. SE. of Spooner on rt. 53; Creaser and Jones; Sept. 7, 1928. 96234 (15, 30–61), Polk Co., Apple R. at Amery; Creaser and Jones; Sept. 11, 1928. 96254 (13, 28–40), Polk Co., Balsam L. at Balsam City; Creaser and Jones; Sept. 12, 1928. 96570 (11, 43–52), Vilas Co., Trout L.; Wright; Aug. 6, 1927. 96573 (7, 20–48), Vilas Co., Trout L.; Wright; Aug. 4, 1927. 96703 (4, 43–47), Vilas Co,. Trout L.; Wright; Aug. 4, 1927. 100202 (2, 37–45), Vilas Co., Silver L.; Schneeberger; July 19, 1932.

=? *Etheostoma* (*Boleosoma*) *nigrum nigrum* Rafinesque. See Lagler and Bailey (1947) and Underhill (1963). We agree with Underhill that recognition of the scaly populations of *E. nigrum* as a subspecies does not aid in understanding the complex distributional pattern of the two morphological types present in the Great Lakes and upper Mississippi regions.

Boleosoma olmstedi var. *brevipinnis* Cope, 1868, Journ. Acad. Sci. Philadelphia, ser. 2, vol. 6, p. 214.

Lectotype: ANSP 22653 (♂, 46), Pennsylvania, Kiskiminitas R., trib. of Allegheny R.; E. D. Cope; number selected by Fowler (1907, p. 522 misprinted as "25,563 (type) to 22,567"), but all syntypes found still mixed together. Largest specimen herein selected as lectotype. D VIII–11; A I,9; LL 38+4=42; INF 4+3; pectoral rays 12–12; nape, preopercle, and breast naked; anterior part of belly naked.

Paralectotypes: ANSP 22654–67 (14, 34–40), same data as lectotype.

Cope mentioned two additional specimens of this form from the Holston River. Fowler did not list these as types. We feel it is best

not to consider these specimens as paralectotypes and formally restrict the type locality to the Kiskiminitas River.

=*Etheostoma* (*Boleosoma*) *nigrum nigrum* Rafinesque.

Boleosoma perlongum Hubbs and Raney, 1946, Misc. Publ. Mus. Zool. Univ. Michigan, no. 65, p. 17, pl. 1, fig. 3.

Holotype: UMMZ 138475 (♂, 71), North Carolina, Columbus Co., N. shore of Lake Waccamaw; E. C. Raney, E. A. Lachner, and R. A. Pfeiffer; Mar. 30, 1941; orig. CU 9285.

Paratypes: UMMZ 138476 (16, 44–75), same data as holotype.

=*Etheostoma* (*Boleosoma*) *perlongum* (Hubbs and Raney). See Cole (1958).

Boleosoma phlox Cope, 1880, U.S. Nat. Mus. Bull. 17, p. 30.

Holotype: ANSP 20447 (1, 34), Texas, Trinity R. at Fort Worth; E. D. Cope. We have found no other type material and cannot determine if the original description was based on one or more specimens. The label says "type." Fowler (1907) referred to ANSP 20447 as "type," not cotype, so we assume this specimen is the holotype.

=*Etheostoma* (*Oligocephalus*) *lepidum* (Baird and Girard).

Boleosoma stigmaeum Jordan, 1877, Ann. New York Lyceum Nat. Hist., vol. 11, p. 311.

Lectotype: ANSP 20645 (♂, 39), Georgia, Floyd Co., Etowah R., trib. of Coosa R. near Rome; D. S. Jordan and C. H. Gilbert; summer, 1876; selected by Bailey, Winn, and Smith (1954, p. 142).

Paralectotypes: ANSP 20646–48 (3, 36–39), same data as lectotype. One syntype was figured by Fowler (1907, fig. 5).

Although labeled as a syntype of *B. stigmaeum*, USNM 31108 is a specimen of *Etheostoma* (*Ulocentra*) *coosae* (Fowler).

=*Etheostoma* (*Boleosoma*) *stigmaeum* (Jordan).

Boleosoma susanae Jordan and Swain, 1883, Proc. U.S. Nat. Mus., vol. 6, p. 249.

Lectotype: USNM 36501 (♂, 41), Kentucky, Whitley Co., trib. of Clear Fk., Cumberland R. near Pleasant View; D. S. Jordan and J. Swain; May 1883; herein selected by Dr. Charles F. Cole. D VIII–12; A I,9; pectoral 11–11; LL 40+4=44; infraorbital canal 4+2; preoperculomandibular pores 9; cheeks, opercles, nape, breast, and anterior half of belly naked.

Paralectotypes: USNM 197634 (7, 25–30), removed from USNM 36501.

=*Etheostoma* (*Boleosoma*) *nigrum susanae* (Jordan and Swain), apparently a valid subspecies.

Boleosoma tessellatum DeKay, 1842, Nat. Hist. New York Zool., vol. 1, pt. 4, p. 20, pl. 20, fig. 57.

Syntypes: Description and figure based on specimens then in New York State collection. Dr. E. M. Reilly, Curator of Zoology, has informed us that the types of this species are no longer present in the New York State Museum.

=*Etheostoma* (*Boleosoma*) *olmstedi olmstedi* Storer. See Cole (1958). Described after July 1, 1842, because that is the date on the preface to part 4, "Fishes," of the "Zoology of New York." Thus *Etheostoma olmstedi* Storer, January 1842 has priority.

Boleosoma vexillare Jordan, 1880, Proc. U.S. Nat. Mus., vol. 2, p. 235.

Holotype: ? (♂, 2½ in. TL), Virginia, Rappahannock R. at Warrenton. Jordan and Evermann (1896, p. 1058) wrote that the type was in the Charles Hallock collection. Cole was unable to find the type during the course of his thesis work on the subgenus *Boleosoma*, and we have also been unable to find it.

=*Etheostoma* (*Boleosoma*) *olmstedi vexillare* (Jordan). See Cole (1958).

Catonotus fasciatus Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 68.

Lectotype: USNM 1345 (♂, 60), New York, Grass R., near Madrid; E. O. Dayton; 1852; herein selected. D VIII–14; A II,7; LL 32+21=53; INF 4+2; POM 9; supratemporal canal moderately interrupted; about 10 dark vertical bars on side of body.

Paralectotypes: USNM 197997 (♂, 53), removed from USNM 1345. USNM 1393 (4, 27–41), New York, Madrid; Dayton; 1852. MCZ 24652+24656 (6, 21–58), same locality; 1853. MCZ 24652 ("2") was originally USNM 1187, then MCZ 22. MCZ 24656 ("6") was originally USNM 1393, then MCZ 21.

=*Etheostoma* (*Catonotus*) *flabellare flabellare* Rafinesque.

Catonotus Kennicotti Putnam, 1863, Bull. Mus. Comp. Zool., vol. 1, p. 3.

Lectotype: USNM 1365 (♂, 35), Illinois; Union Co., a rocky brook; R. Kennicott; April 1857; herein selected. D VII–14; A II,7; LL 25+28=53; INF 4+2; POM 10; supratemporal canal moderately interrupted; cheeks, opercles, and breast naked; nape with few, scattered, imbedded scales; branchiostegal membranes moderately connected; tips of dorsal spines with bony knobs; about 10 horizontal lines on body.

Paralectotypes: USNM 198002 (20, 29–41), removed from USNM 1365. USNM 154713 (7, 27–42), same data; orig. USNM 1365, then Wesleyan Univ. 554; specimens badly dried out. MCZ 24658 (6, 29–50), same data; orig. USNM 1365, then MCZ 2. UMMZ 86347 (1, 42), out of MCZ 24658. MCZ 24665 (♂, 52; 3♀, 31–47), same locality; April–May 1856; orig. USNM 1811, then MCZ 37.

USNM 154784 (1, 42), same data; orig. USNM 1811, then Wesleyan Univ. 558.

=*Etheostoma* (*Catonotus*) *kennicotti* (Putnam).

Catonotus lineolatus Agassiz, 1854, Amer. Journ. Sci. and Arts, vol. 17, p. 305.

Lectotype: MCZ 24637+24657 (♂, 46), Illinois, small creeks near Quincy; L. Watson; 1853; orig. USNM 1801, then MCZ 1; herein selected. D VII–14; A II,8; LL 24+29=53; INF 4+2; POM 10; supratemporal canal incomplete; interorbital pores present; head and breast naked; humeral spot prominent; tips of dorsal spines widened; about seven rows of fine longitudinal stripes on the body above the lateral line; branchiostegal membranes broadly connected.

Paralectotypes: MCZ 43093 (5, 30–39) and UMMZ 86481 (2♂, 41–52) removed from MCZ 24637+24657. MNHN 2785 (♂, 43), same locality, orig. MCZ 859.

=*Etheostoma* (*Catonotus*) *flabellare lineolatum* (Agassiz).

Cottogaster aurantiacus Cope, 1868, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 6, p. 211, color pl. 24, fig. 6.

Lectotype: ANSP 13789 (1, 55), Virginia, N. Fork of Holston R.; E. D. Cope; 1867; number selected by Fowler (1907, p. 521); specimen herein selected. D XV–14; A II,10; LL 91.

Paralectotype: ANSP 13790 (1, 55), same data as lectotype.

=*Percina* (*Hypohomus*) *aurantiaca* (Cope).

Cottogaster cheneyi Evermann and Kendall, 1898, Bull. U.S. Fish Comm., vol. 17, p. 129, pl. 8, fig. 8.

Holotype: USNM 48781 (♂, 51), New York, St. Lawrence Co., Racket R. [now Raquette R.], near Norfolk; B. W. Evermann and B. A. Bean; July 18, 1894; figured in Jordan and Evermann (1900, fig. 445).

Paratypes: USNM 48782 (4, 39–47); USNM 126978 (4, 40–47), orig. BF 527; and SU 9048 (4, 40–49), orig. given as SU 5774; all with same data as holotype.

=*Percina* (*Cottogaster*) *copelandi* (Jordan).

Cottogaster putnami Jordan and Gilbert, 1883, U.S. Nat. Mus. Bull. 16, p. 498.

Lectotype: USNM 1314 (♂, 45), New York, Westport Br., Lake Champlain; S. F. Baird; September 1853; orig. no. 55; herein selected. D XI–12; A II,9; LL 48; INF 8; POM 10; cheeks naked; breast naked except for a large modified scale in the center and another between the bases of the pelvic fins; nape naked anteriorly; opercles scaly. This name was proposed as "nom. sp. nov." for *Boleosoma tessellatum* of Thompson (1853), Putnam (1863), and others, not of

DeKay. *Cottogaster putnami* was actually being proposed as the name of a new species and not as a substitute name, so the collection on which the description was based, USNM 1314, becomes the type material.

Paralectotypes: USNM 198000 (27, 35–49), removed from USNM 1314 + USNM 1193. USNM 1193, with the same locality and collector as USNM 1314, is now mixed with 1314 and may have been so at the time of the original description. All the specimens are the same species. At least one syntype of *C. putnami* out of USNM 1314 was included in a gift to the University of Cincinnati, dated Oct. 30, 1884.

=*Percina* (*Cottogaster*) *copelandi* (Jordan).

Diplesion fasciatus Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 101.

Lectotype: MCZ 24625 (♂, 45), Mexico, Chihuahua R.; J. Potts; orig. USNM 743 (6)+USNM 1192 (3)+USNM 1206 (1), then MCZ 87; herein selected. D X–12; A I,7; LL 46+13=59; INF 9; POM about 10; interorbital, parietal, nape, cheeks, opercle, and breast naked; anal spine very strong.

Paralectotypes: MCZ 43092 (♂, 42; ♀, 42) and UMMZ 86349 (♀, 41), removed from MCZ 24625.

=*Etheostoma* (*Austroperca*) *australe* Jordan because *fasciatus* is preoccupied in *Etheostoma* by *Catonotus fasciatus* Girard.

Estrella atromaculata Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 66.

Types: We have been unable to find type material of this form. During the course of his thesis work on the subgenus *Boleosoma*, Cole was also unable to locate any types. The original description was based on specimens from "the Potomac River, in the neighborhood of Washington."

=*Etheostoma* (*Boleosoma*) *olmstedi atromaculatum* (Girard). See Cole (1958).

Etheostoma (*Nothonotus*) *acuticeps* Bailey, 1959, Occ. Pap. Mus. Zool. Univ. Michigan, no. 603, pl. 1.

Holotype: UMMZ 159014 (♂, 58), Tennessee, Sullivan Co., S. Fork of Holston R., 0.5 mi. above S. Holston Dam, 7 mi. SE. of Bristol; R. M. Bailey, G. P. Cooper, and J. D. Kilby; June 23, 1949.

Paratypes: UMMZ 159013 (3, 49–51), same data as holotype. UMMZ 157585 (2, 45–52), same locality, R. M. Bailey, R. W. Eschmeyer, and J. Chance; Sept. 23, 1947.

=*Etheostoma* (*Nothonotus*) *acuticeps* Bailey.

Etheostoma arcus-celestis Crevecoeur, 1903, Trans. Kansas Acad. Sci., vol. 18, pp. 177–178;

Syntypes: USNM?, Kansas, Pottawatomie Co., French Cr., trib. of Vermillion R. near Onaga; F. F. Crevecoeur; April–May 1902. The types were sent to the U.S. National Museum in 1907 along with specimens of *Campostoma anomalum* and *Semotilus atromaculatus*. We have located the minnows (USNM 72474 and 70457) but have been unable to find the types of *E. arcus-celestis*.

=*Etheostoma* (*Oligocephalus*) *spectabile pulchellum* (Girard) according to Mr. Donald A. Distler (pers. comm.).

Etheostoma aubeenaubei Evermann, 1900, Rept. U.S. Fish Comm., vol. 25, p. 367, pl. 17.

Holotype: USNM 65248 (♀, 41), Indiana, Marshall Co., Aubeenaubee Cr., E. inlet of Lake Maxinkuckee; Evermann and Scovell; Aug. 23, 1899; erroneously given as USNM 49379 in original description.

Paratypes: All from Aubeenaubee Cr., Indiana. USNM 65255 (2, 38–39), Aug. 23, 1899. USNM 65258 (10, 34–40), Aug. 4, 1899. USNM 65260 (69, 35–40), Aug. 23, 1899. Two paratypes out of USNM 65260 were given to the Lebanon City Schools, Lebanon, Wis., Apr. 5, 1911. USNM 65249 (10, 25–30); Long Point; Aug. 11, 1899. USNM 65263 (5, 30–34), Aug. 8, 1899.

=*Etheostoma* (*Oligocephalus*) *exile* (Girard). See Hubbs (1926, p. 68).

Etheostoma (*Etheostoma*) *australe* Jordan, 1889, Proc. U.S. Nat. Mus. vol. 11, p. 362, replacement name for *Diplesion fasciatus* Girard, preoccupied in *Etheostoma* by *Catonotus fasciatus* Girard.

Lectotype: MCZ 24625 (♂, 45). See *Diplesion fasciatus*.

Paralectotypes: MCZ 43092 and UMMZ 86349.

=*Etheostoma* (*Austroperca*) *australe* Jordan.

Etheostoma blennioides Rafinesque, 1819, Journ. Phys., Chim., Hist. Nat., Arts, vol. 88, p. 419.

Types: As Call (1899) has noted, Rafinesque did not preserve any type material. Type locality Ohio River. Examination of a photograph of a sketch of this species from Rafinesque's notebook (fig. 1) confirms the attribution of the name *blennioides* to the species currently known by this name.

=*Etheostoma* (*Etheostoma*) *blennioides blennioides* Rafinesque. See Miller (1964).

Etheostoma (*Rhothoeca*) *blennius* Gilbert and Swain *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 55.

Holotype: USNM 36187 (1, 60), Alabama, Cox's Cr., trib. of Tennessee R. near Florence; C. H. Gilbert and J. Swain; summer, 1884.

Paratype: SU 1955 (1, 47), Alabama, Shoal Cr., trib. of Tennessee R. near Florence; Gilbert and Swain; summer, 1884.

=*Etheostoma* (*Etheostoma*) *blennius* Gilbert and Swain. See Hubbs and Black (1940).

Etheostoma caerulea D. H. Storer, 1845, Proc. Boston Soc. Nat. Hist., vol. 2, p. 47. Original description repeated almost verbatim, with the addition of color changes in alcohol, in Storer (1846).

Holotype: MCZ 32949 (♀, 53), Illinois, Fox R.; S. C. Clark.

=*Etheostoma* (*Oligocephalus*) *caeruleum caeruleum* Storer. See Trautman (1930) and Knapp (1964).

Etheostoma cinerea D. H. Storer, 1845, Proc. Boston Soc. Nat. Hist., vol. 2, p. 49. Original description repeated almost verbatim in Storer (1846).

Syntypes: MCZ ?, Alabama, Florence; received from C. A. Hentz. We have been unable to find any types.

=*Etheostoma* (*Allohistium*) *cinereum* Storer. See Bailey and Gosline (1955).

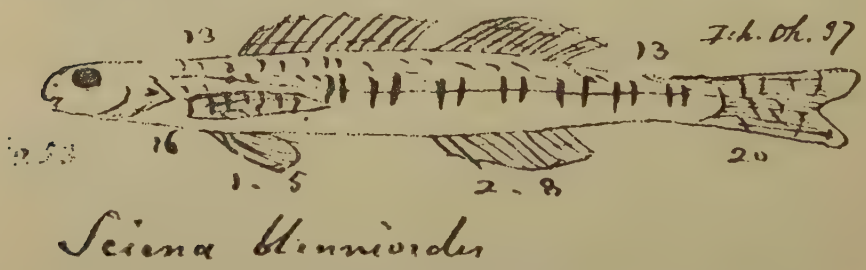

FIGURE 1.—*Etheostoma blennioides* Rafinesque (sketch from Rafinesque's notebook).

Etheostoma (*Hololepis*) *collis lepidinion* Collette, 1962, Tulane Stud. Zool., vol. 9, no. 4, p. 194, figs. 17, 18.

Holotype: USNM 179847 (♂, 40), Virginia, Charlotte Co., trib. of Horsepen Cr., 2.4 mi. NW. of Wyliesburg on Va. 907; B. B. Collette, C. F. Cole, J. G. New, E. C. Raney, C. R. Robins; Mar. 31, 1956.

Paratypes: CU 29992 (8, 30–38), same data as holotype. USNM 100215 (3, 29–31), Virginia, Charlotte Co., Wards Fork, trib. of Roanoke R., S. of Madisonville; S. Abraham; Apr. 23, 1935. USNM 101330 and 101334 (12, 22–29), Virginia, Charlotte Co., Wards Fork, Roanoke Cr., below mill dam between Madisonville and Cullen; G. S. Myers and Abraham; Sept. 15, 1935. CU 34544 (7, 29–40), Virginia, Charlotte Co., Wards Fork Cr., 6.7 mi. SSW. of Madisonville

on Va. 47; Collette and J. S. Ramsey; Sept. 16, 1959. DU uncat. (♂, 38), North Carolina, Granville Co., Beech Cr., 3 mi. NNE. of Cornwall (now flooded by Kerr Dam); J. R. Bailey 52–7; spring, 1952. DU uncat. (5♀, 31–36), North Carolina, Durham Co., Lick Cr. on rt. 264, 4.5 mi. E. of Oak Grove; Bailey and Walter; Apr. 6, 1950. DU uncat. (♂, 36), North Carolina, Orange Co., Eno R., 2 mi. W. of Hillsboro; J. R. Bailey 49–9; Mar. 20, 1949. DU uncat. (♀, 38), North Carolina, Orange Co., Eno R. at ford N. of Hillsboro near Skipper Wright's; J. R. Bailey 55–3; Apr. 21, 1955.

=*Etheostoma* (*Hololepis*) *collis lepidinion* Collette.

Etheostoma cragini Gilbert, 1885, Bull. Washburn College Lab. Nat. Hist., vol. 1, no. 3, p. 99.

Lectotype: USNM 38320 (1, 33), Kansas, Finney Co., small brook leading from the "Lake" at Garden City to Arkansas R.; F. W. Cragin; March–April 1885; USNM 38320 listed by Jordan and Evermann (1896, p. 1092) as "type" then containing three specimens; lectotype herein selected. D IX–12; A II,6; LL 19+32=51; POM 10; INF 7 pores on right, 8 on left; supratemporal canal widely interrupted; cheeks and opercles naked; breast and prepectoral area with few, imbedded scales.

Paralectotypes: USNM 197994 (2, 29), removed from USNM 38320. USNM 125109 (1, 23), same data, orig. BF 309.

Additional syntypes from SU 2141 became mixed with SU 694 from Canon City, Colo. and so were not considered for selection of a lectotype.

=*Etheostoma* (*Oligocephalus*) *cragini* Gilbert.

Etheostoma cumberlandicum Jordan and Swain, 1883, Proc. U.S. Nat. Mus. vol. 6, p. 251.

Lectotype: USNM 36502 (♂, 41), Kentucky, Whitley Co., Wolf Cr., trib. of Clear Fork, Cumberland R., near Pleasant View; D. S. Jordan, J. Swain, C. H. Gilbert; May 1883; herein selected. This specimen was found alone in a bottle with three labels, each reading "type". Four additional specimens were found in another bottle, also labeled USNM 36502, *Etheostoma cumberlandicum*. The single specimen is in as good condition as the largest of the four, so it is selected lectotype. D VII–11; A II,7; LL 25+19=44; INF 4+1; POM 10; supratemporal canal interrupted; preopercle smooth; cheeks, opercles, nape, and breast naked.

Paralectotypes: USNM 197992 (4, 20–42), removed from USNM 36502.

=*Etheostoma* (*Catonotus*) *flabellare cumberlandicum* Jordan and Swain. See Ross and Carico (1963, p. 12).

Etheostoma (*Hadropterus*) *cymatotaenia* Gilbert and Meek *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 51.

Lectotype: USNM 36215 (♂, 68, labeled "drawn"), Missouri, Niangua R., near Marshfield; C. H. Gilbert and S. E. Meek; summer, 1884; herein selected; (fig. 2). D XII–12; A II,10; LL 66; branchiostegal membranes slightly connected; opercles, cheeks, breast, and belly scaly; midventral belly scales slightly modified; thin flangelike midventral keel on lower edge of caudal peduncle near caudal base.

Paralectotypes: USNM 198090 (♂, 63), removed from USNM 36215. USNM 36260 (2 ♂, 63–68), Missouri, Osage Fork of Gasconade R., near Marshfield; Gilbert and Meek; summer, 1884; erroneously given as USNM 38260 in original description and in Jordan and Evermann (1896, p. 1042). USNM 36308 (5, 40–44), Missouri, Sac R., near Greenfield; Gilbert and Meek; summer, 1884. SU 2603 (4, 39–54), same data as USNM 36308.

Additional syntypes from SU 3949, with the same data as USNM 36215, became mixed with nontype specimens from Kentucky, collected by A. J. Woolman as a result of the 1906 earthquake.

=*Percina* (*Hypohomus*) *cymatotaenia* (Gilbert and Meek).

FIGURE 2.—*Etheostoma cymatotaenia* Gilbert and Meek (previously unpublished drawing of lectotype drawn in October 1884).

Etheostoma (*Ulocentra*) *davisoni* Hay, 1885, Proc. U.S. Nat. Mus., vol. 8, p. 554.

Holotype: USNM 37365 (1, 41), Florida, Santa Rosa Co., Yellow R., near Chaffin; H. T. Mann and D. M. Davison; April 1885.

=*Etheostoma* (*Boleosoma*) *davisoni* Hay. *Etheostoma davisoni* has long been considered a synonym of *E. stigmaeum*. However, *E. davisoni* has recently been recognized as a distinct species by Mr. William Mike Howell, who is presently studying the taxonomy and systematics of this group. His validation of *E. davisoni* will appear elsewhere.

Etheostoma (*Oligocephalus*) *ditrema* Ramsey and Suttkus, 1965, Tulane Stud. Zool., vol. 12, no. 3, p. 66, figs. 1–3.

Holotype: TU 35703 (♂, 34) Georgia, Chattooga Co., trib. to Mills Cr., trib. to Chattooga R., 4.3 airline mi. W. of Lyerly; July 18, 1962.

Paratypes: TU 29153 (21, 15–35), out of TU 35703. The following are all from the type locality. TU 26086 (8, 24–31), Apr. 19, 1962; TU 27566 (9, 18–34), May 30, 1962; TU 32762 (34, 19–42), June 1, 1964; TU 32981 (43, 20–39), June 23, 1964. Five paratypes out of TU 32981 were sent to each of the following institutions: USNM 198607 (29–32), MCZ 43123 (29–37), ANSP 101231 (26–32), CU 47872 (30–32), SU 62401 (27–36), and UMMZ 187501 (29–36). Also ANSP 20649 (1, 23), Georgia, Floyd Co., near Rome; summer, 1876; D. S. Jordan.

=*Etheostoma* (*Oligocephalus*) *ditrema* Ramsey and Suttkus.

Etheostoma duryi Henshall, 1889, Journ. Cincinnati Soc. Nat. Hist., vol. 11, p. 32.

Syntypes: Cincinnati Soc. Nat. Hist. (3 ♂, 2 ♀, 2–3 in.), Tennessee, small trib. of Tennessee R. at Whiteside on Memphis and Charleston RR.; C. Dury. We have been unable to locate any of the syntypes.

=*Etheostoma* (*Ulocentra*) *duryi* Henshall.

Etheostoma flabellaris Rafinesque, 1819, Journ. Phys., Chim., Hist. Nat., Arts, vol. 88, p. 419.

Types: As Call (1899) indicated, Rafinesque did not preserve any of his type material. Type locality—the Ohio R. The sketch of this species in Rafinesque's notebook (fig. 3) leaves no doubt as to the identity of what Rafinesque had before him.

=*Etheostoma* (*Catonotus*) *flabellare flabellare* Rafinesque.

Etheostoma fontinalis Rafinesque, 1820, Ichthyologia Ohiensis, p. 85.

Types: As Call (1899) noted, Rafinesque did not preserve types. Type locality—"in the springs and caves near Lexington."

=*Etheostoma* (*Catonotus*) *flabellare flabellare* Rafinesque according to Jordan and Evermann (1896, p. 1097).

Etheostoma formosa Henshall, 1889, Journ. Cincinnati Soc. Nat. Hist., vol. 11, p. 32.

Holotype: Cincinnati Soc. Nat. Hist. (1, 2½ in.), Tennessee, small trib. of Tennessee R. at Whiteside on Memphis and Charleston RR.; C. Dury. We have been unable to locate the type.

=*Etheostoma* (*Oligocephalus*) *caeruleum* ssp. See Knapp (1964).

Etheostoma fricksia Hildebrand, 1923, Bull. Bur. Fish., vol. 39, p. 7, fig. 1.

Holotype: USNM 82633 (♂, 44), Georgia, Richmond Co., Savannah Dr., small creek on Sanitary Dairy Farm near Augusta; S. F. Hildebrand; Mar. 26, 1918.

Paratypes: USNM 92818 (♂, 31; 2♀, 33–47), same data as holotype.

=*Etheostoma* (*Oligocephalus*) *fricksium* Hildebrand. See Bailey and Richards (1963).

Etheostoma güntheri Eigenmann and Eigenmann, 1892, Amer. Nat., vol. 26, p. 962. Description much enlarged in Eigenmann (1894).

Lectotype: BMNH 1892.12.30.151 (♂, 41), Canada, Manitoba, Red R. of the North at Winnipeg; C. H. Eigenmann; August–September 1892; herein selected. D IX–13; A II,10; LL 57; moderate frenum present; posterior rays of anal fin extending beyond posterior end of depressed second dorsal; black spot at anterior and posterior ends of first dorsal.

Paralectotypes: BMNH 1892.12.30.152–153 (2, 41–51), same data as lectotype.

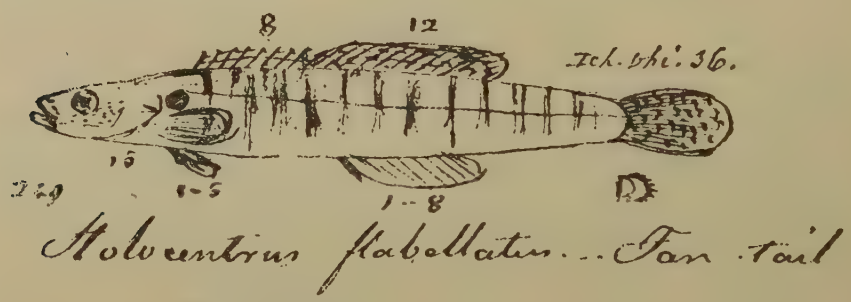

FIGURE 3.—*Etheostoma flabellare* Rafinesque (sketch from Rafinesque's notebook).

Three other specimens are mentioned, both in the original description and in the 1894 paper. We do not think that these should be considered as syntypes. USNM 45567 (♂, 42) and UMMZ 187522 (2, 31–42), orig. IU 1449, then IU 4506, Iowa, Cedar Rapids; S. E. Meek.

=*Percina* (*Imostoma*) *shumardi* (Girard). See Hubbs and Greene (1928, p. 384).

Etheostoma hildebrandti Evermann and Clark, 1910, Proc. Biol. Soc. Washington, vol. 23, p. 87, fig. 1.

Holotype: USNM 64616 (1, 43), Indiana, Fulton Co., Fletcher Lake, 12 mi. N. of Logansport near Cass Co. line; B. W. Evermann and H. W. Clark; Oct. 6, 1900.

=*Etheostoma* (*Oligocephalus*) *exile* (Girard).

Etheostoma (*Ulocentra*) *histrio* Jordan and Gilbert *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 47.

Lectotype: USNM 36386 (♂, 42), Oklahoma, Poteau R., W. of Hackett City, Ark.; D. S. Jordan and C. H. Gilbert; summer, 1864; herein selected by Dr. Chu-fa Tsai. D IX–13; A II,7; LL 53; INF 4+3; POM 9; belly and breast naked; cheek with 6 imbedded scales; opercle with 2 scales; 6 dorsal blotches.

Paralectotypes: USNM 188972 (3, 24–33), removed from USNM 36386. SU 2682 (2, 33–35), same data. USNM 36409 (4, 24–35) and SU 569 (1, 32), Arkansas, Clark Co., Washita (Ouachita) R. at Arkadelphia; Jordan and Gilbert; summer, 1884. USNM 36448 (3, 30–34), Arkansas, Saline Co., Saline R. at Benton, just above railroad bridge; Jordan and Gilbert; summer, 1884.

=*Etheostoma* (*Etheostoma*) *histrio* Jordan and Gilbert.

Etheostoma (*Oligocephalus*) *hopkinsi binotatum* Bailey and Richards, 1963, Occ. Pap. Mus. Zool. Univ. Michigan, no. 630, pl. 1, B–C.

Holotype: CU 44157 (♂, 53), South Carolina, Abbeville Co., Calhoun Cr., 7.6 mi. E. of Calhoun Falls on S.C. 72; E. C. Raney, C. R. Robins, R. H. Backus, R. W. Crawford, J. N. Layne, and R. L. Wigley; ECR 1932; Mar. 27, 1951; orig. CU 19600.

Paratypes: CU 19600 (14, 37–55) and UMMZ 180075 (♂, 48; 3 ♀, 44–50), same data as holotype. Apparently the "additional specimens examined" by Bailey and Richards must also be considered as paratypes because they form part of the type-series as defined by Article 72b of the International Code of Zoological Nomenclature and were not referred to as variants, doubtfully associated with the nominal form, or expressly excluded from it. CU 48401 (1, 38), Georgia, Madison Co., S. Fork of Broad R., 2 mi. W. of Comer; Nov. 1, 1952, Ichthyology Class; orig. UG 269. CU 48399 (1, 33), Georgia, Madison Co., S. Fork of Broad R., 1–2 mi. S. of Carlton; Apr. 11, 1954; orig. UG 22E. CU 48400 (1, 46), Georgia, Madison Co., S. Fork of Broad R., 1–2 mi. S. of Carlton; Apr. 19, 1954; Ichthyology Class; orig. UG 22D. CU 48396 (5, 30–49), Georgia, Oglethorpe-Madison cos., S. Fork of Broad R., Anthony Shoals, near Carlton; Nov. 1, 1952; Ichthyology Class; orig. UG 22C. CU 43994 (♂, 48), Georgia, Madison Co., S. Fork of Broad R., Anthony Shoals, near Carlton; Sept. 3, 1950; W. J. Houck. UMMZ 133122 (3, 32–47), Georgia, Oglethorpe Co., Dry Fork Cr.; O. K. Fletcher; Nov. 3, 1940. UMMZ 133224 (8, 27–42), Georgia, Oglethorpe Co., Dry Fork Cr.; Fletcher; Feb. 8, 23, 1941. UMMZ 137773 (31, 27–43), Georgia, Oglethorpe-Wilkes cos., Dry Fork Cr., about 1 mi. N. of U.S. 78; Fletcher; Mar. 11, Apr. 13, 1941. CU 48398 (2, 38–46), Georgia, Oglethorpe Co., Buffalo Cr., 6 mi. E. of Lexington; Apr. 29, 1953; B. Martof; orig. UG 283. CU 48397 (2, 30–41), Georgia,

Columbia Co., W. Fork of Cliatt Cr.; July 24, 1948; orig. UG 90. CU 48402 (15, 21–51), Georgia, Lincoln Co., Lloyds Cr.; July 23, 1948; Scott and Tyson; orig. UG 80. USNM 179063 (4, 37–49), South Carolina, Anderson Co., Twenty-three Mile Cr., 0.9 mi. NW. of Sandy Springs, 11.1 mi. NW. of Anderson on U.S. 76; Mar. 25, 1951; Raney, Robins, Backus, Crawford, Layne, Wigley; orig. CU 19604. CU 43515 (6, 23–39), South Carolina, Edgefield Co., 3 mi. E. of Edgefield Co. line on Ga. 23; Apr. 3, 1953; J. New.

=*Etheostoma* (*Oligocephalus*) *hopkinsi binotatum* Bailey and Richards.

Etheostoma iowae Jordan and Meek, 1885, Proc. U.S. Nat. Mus., vol. 8, p. 10.

Lectotype: SU 1457 (1, 36), Iowa, Chariton R. at Chariton; D. S. Jordan and S. E. Meek; July–September, 1884; herein selected; one specimen of *E. nigrum* removed and recataloged as SU 62430. D IX–10; A II, 7 or 8; LL 28+31=59, first anal spine much thicker than second; preopercle, opercle, nape, and belly scaled; breast naked.

Paralectotype: The original description was based on three specimens, but we have been unable to locate the third.

=*Etheostoma* (*Oligocephalus*) *exile* (Girard). See Hubbs (1926, p. 66).

Etheostoma (*Nothonotus*) *jordani* Gilbert, 1891, Bull. U.S. Fish Comm., vol. 9, p. 156, pl. 43, fig. 2.

Lectotype: USNM 125110 (♂, 48), Alabama, Calhoun Co., Choccolo Cr. trib. of Coosa R. at Oxford; P. H. Kirsch, W. M. Andrews, and E. O. Jones; May 23, 1889; herein selected. D X–11; A II, 8; LL (right side) 49; INF 8; POM 10; cheeks, prepectoral area, and breast naked; opercles, nape, and belly scaled; no regular longitudinal dark stripes along edges of scale rows.

Paralectotypes: USNM 198107 (8, 27–47), removed from USNM 125110. BMNH 1893.5.5.9–10 (2, 27–39), same data as lectotype. CAS 22854 (4, 24–38), and UMMZ 61706 (♀, 40), same data; orig. IU 4693; badly dried. We have not located the additional syntypes from Chestnut Cr., Verbena, Ala.

=*Etheostoma* (*Nothonotus*) *jordani* Gilbert. See Bailey (1959).

Etheostoma juliae Meek, 1891, Bull. U.S. Fish Comm., vol. 9, p. 130, pl. 42, fig. 2.

Syntypes: USNM 125116 (2 ♂, 41–49) and SU 1010 (♂, 37), Missouri, Greene Co., James R., trib. of White R., near Springfield; S. E. Meek, L. Rettger, and F. M. Drew; July 31, 1889; one of syntypes figured in Jordan and Evermann (1900, fig. 466).

Two topotypes of this species were found with *E. spectabile* (USNM 63366) that were collected with the types of *E. juliae*. They have recataloged as USNM 196750.

=*Etheostoma* (*Oligocephalus*) *juliae* Meek.

Etheostoma lepidogenys Evermann and Kendall, 1894, Bull. U.S. Fish Comm., vol. 12, p. 114, pl. 35.

Syntypes: USNM 44840 (2 ♂, 38–42), Texas, Comal Co., Guadalupe Drainage, Corral Cr. in the largest of the Comal Springs at New Braunfels; B. W. Evermann; Dec. 3, 1891.

=*Etheostoma* (*Oligocephalus*) *lepidum* (Girard).

Etheostoma Linsleyi H. R. Storer, 1851, Proc. Boston Soc. Nat. Hist., vol. 4, p. 37.

Syntypes: New York, Wayne Co., streams at Walcott [now Wolcott], near Lake Ontario; J. H. Linsley. We have been unable to find any type material of this nominal form.

=*Etheostoma* (*Catonotus*) *flabellare flabellare* Rafinesque.

Etheostoma (*Imostoma*) *longimana* Jordan, 1888, Proc. Acad. Nat. Sci. Philadelphia, vol. 40, p. 179.

Lectotype: MCZ 24619 (1, 53), Virginia, trib. of James R., S. F. Baird; about 1855; orig. USNM 1305, then MCZ 150; herein selected by Dr. Charles F. Cole. Anal spines II; LL 44; INF 8; POM 10; supratemporal canal complete; pectoral rays 13–12; scales above lateral line 4; scales below lateral line 8.

Paralectotypes: MCZ 43074 (2, 36–37), removed from MCZ 24619; 5 specimens of *E. nigrum* removed and recataloged as MCZ 42199. USNM 120258 (2, 42–44) and UMMZ 86603 (3, 33–47), same data; previously MCZ 24619; 1 specimen of *E. nigrum* removed from USNM 120258 and recataloged as USNM 197414.

=*Etheostoma* (*Boleosoma*) *longimanum* Jordan.

Etheostoma (*Etheostoma*) *luteovinctum* Gilbert and Swain *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 58.

Lectotype: USNM 36139 (1, 37), Tennessee, Stone R., near Nashville; C. H. Gilbert and J. Swain; summer, 1884; herein selected. D IX–13; A II,7; LL 33+17=50; INF barely incomplete, 4+5; POM 10; supratemporal canal complete; cheeks, opercles, and nape fully scaled; breast partially scaled; 6 dorsal saddles.

Paralectotypes: USNM 198003 (2, 33–35), removed from USNM 36139, and SU 3945 (2, 39–40), same data as lectotype.

=*Etheostoma* (*Oligocephalus*) *luteovinctum* Gilbert and Swain.

Etheostoma lynceum Hay *in* Jordan, 1885, Ann. Rept. Comm. Fish and Fish. for 1884, p. 868, a substitute name for *Nanostoma elegans* Hay which is preoccupied in *Etheostoma* by *Boleichthys elegans* Girard.

Types: The types of *E. lynceum* are the same as those of *Nanostoma elegans*, USNM 27445, holotype and SU 627, paratype.

=*Etheostoma* (*Etheostoma*) *zonale lynceum* (Hay), a valid subspecies according to Dr. Chu-fa Tsai (pers. comm.).

Etheostoma macrocephalum Cope, 1869, Trans. Amer. Philos. Soc., new ser., vol. 13, p. 400.

Lectotype: ANSP 22626 (♂, 56), Pennsylvania, Youghiogheny R.; E. D. Cope. This specimen herein selected as the lectotype because it appears to be the only extant syntype. D XIV–12; A II,10; LL about 76; opercle naked; few small scales on cheek posterior to eye; snout long and pointed; eye length longer than snout length.

Fowler (1907) listed ANSP 22626 and 22628 as cotypes. ANSP 22628 (♂, 58) is not part of the type series but a *Percina maculata* with LL 62–64, cheek and opercle completely covered with scales, short blunt snout, eye about equal to snout length. The ANSP catalog lists this specimen as *Alvordius maculatus* from the Kiskiminitas River. Cope based his description on three syntypes, but we have been unable to locate the other two.

=*Percina* (*Alvordius*) *macrocephala* (Cope).

Etheostoma maculata Kirtland, 1841, Boston Journ. Nat. Hist., vol. 3, p. 276, pl. 2, fig. 3.

Types: We have not found any extant type material. Type locality—Mahoning R., Ohio.

=*Etheostoma* (*Nothonotus*) *maculatum maculatum* Kirtland. See Bailey (1959) and Raney and Zorach (MS).

Etheostoma microperca Jordan and Gilbert *in* Jordan, 1888, Manual of the Vertebrates, 5th ed., p. 134, a substitute name for *Microperca punctulatum* (Putnam), preoccupied in *Etheostoma*.

Types: The types of *E. microperca* are the same as those of *Microperca punctulatum* Putnam.

=*Etheostoma* (*Microperca*) *microperca* Jordan and Gilbert.

Etheostoma micropterus Gilbert, 1890, Proc. U.S. Nat. Mus., vol. 13, p. 289.

Holotype: USNM 38245 (♀, 40), Mexico, Chihuahua; E. Wilkinson; figured in Evermann and Kendall (1894, pl. 35) and Jordan and Evermann (1900, fig. 459).

=*Etheostoma* (*Oligocephalus*) *pottsii* (Girard).

Etheostoma (*Nothonotus*) *moorei* Raney and Suttkus, 1964, Copeia, no. 1, p. 131, fig. 1.

Holotype: CU 42883 (♂, 43), Arkansas, Cleburne Co., Devils Fork, 2.5 mi. SW. of Woodrow and 6 airline mi. W. of Drasco; L. W. Knapp and R. V. Miller; Apr. 26, 1962.

Paratypes: CU 41966 (15, 28–42), same data as holotype. USNM 188357 (108, 20–56) and UMMZ 181397 (15, 31–50), type locality; K. Strawn et al.; Aug. 21, 1962. TU 22697 (41, 26–57), Arkansas, Cleburne Co., Devils Fork between Stark and Edgemont on rt. 16; R. D. Suttkus, M. A. Wilkens, and B. I. Sundararaj; Oct. 23, 1959. TU 26227 (22, 27–50), Arkansas, Van Buren Co., Middle Fork at Shirley; Suttkus and W. T. Mason; Aug. 17, 1962. TU 26249 (21, 31–44), Arkansas, Van Buren Co., South Fork, 9 mi. SW. of Clinton on rt. 95; Suttkus and Mason; Aug. 17, 1962. KU 6652 (5, 20–36), Arkansas, Van Buren Co., South Fork of Little Red R. on Ark. 95, approx. 2.5 mi. SW. of Scotland; D. A. Distler and W. N. Berg; Sept. 3, 1960.

=*Etheostoma* (*Nothonotus*) *moorei* Raney and Suttkus.

Etheostoma nevisense Cope, 1870, Proc. Amer. Philos. Soc., vol. 11, p. 261.

Holotype: ANSP ?, (1, ?), North Carolina, falls of Neuse R., 8 mi. E. of Raleigh. Types of other species described by Cope in the 1870 paper were deposited at ANSP, but Fowler (1907) did not mention the type of this form, and we have been unable to find it.

=*Percina* (*Alvordius*) *peltata nevisense* (Cope) according to Dr. Edward C. Raney (pers. comm.).

Etheostoma (*Hadropterus*) *nianguae* Gilbert and Meek *in* Gilbert 1887, Proc. U.S. Nat. Mus., vol. 10, p. 52.

Lectotype: USNM 36214 (♂, 86), Missouri, Webster Co., headwaters of Niangua R., near Marshfield; C. H. Gilbert and S. E. Meek; summer, 1884; listed as type by Jordan and Evermann (1896, p. 1043); selection herein confirmed. D XII–14; A II,12; LL 73; caudal peduncle scale rows 12–2–13.

Paralectotype: SU 5299 (1, 82), same data as lectotype. The original description says deposited in museum of University of Cincinnati, but as Böhlke (1953, p. 73) noted, this specimen bears the proper data and the word "type."

=*Etheostoma* (*Oligocephalus*) *nianguae* Gilbert and Meek. See Kuehne and Bailey (1961).

Etheostoma (*Hadropterus*) *nianguae spilotum* Gilbert, 1887. Proc. U.S. Nat. Mus., vol. 10, p. 53.

Lectotype: USNM 38319 (1, 49), Kentucky, Owsley Co., Sturgeon Cr., trib. of Kentucky R. near Traveler's Rest; C. H. Gilbert; summer, 1884; listed as type by Jordan and Evermann (1896, p. 1044); selection herein confirmed. D X–13; A II,11; LL 50+10=60; caudal peduncle scale rows 10–2–10.

219–948—66——3

Paralectotypes: SU 4036 (6, 16–67), same data as lectotype; 3 specimens (17–20), apparently *Etheostoma* (*Boleosoma*) sp., removed and recataloged as SU 62429.

=*Etheostoma* (*Oligocephalus*) *sagitta spilotum* Gilbert. See Kuehne and Bailey (1961).

Etheostoma nigra Rafinesque, 1820, Ichthyologia Ohiensis, p. 37.

Types: The original description was based on material from the Green R., Kentucky. As Call (1899) noted, Rafinesque did not preserve any of his type material.

=*Etheostoma* (*Boleosoma*) *nigrum nigrum* Rafinesque.

Etheostoma nuchale Howell and Caldwell, 1965, Tulane Stud. Zool., vol. 12, no. 4, p. 101, fig. 1.

Holotype: UMMZ 187523 (♂, 39), Alabama, Jefferson Co., Glen Spring, Bessemer on Co. rt. 20; W. M. Howell and R. D. Caldwell; Mar. 24, 1964.

Paratypes: UMMZ 187524 (♀, 40, allotype), UMMZ 187525 (20, 27–45), USNM 259800–F 1 (20, 22–48), UAIC 1227 (9, 24–43), same collection as holotype. TU 34591 (20, 17–40), same locality; R. D. Suttkus, J. S. Ramsey, and F. Rose; Sept. 9, 1964.

=*Etheostoma* (*Oligocephalus*) *nuchale* Howell and Caldwell.

Etheostoma obeyense Kirsch, 1892, Bull. U.S. Fish. Comm., vol. 10, p. 292, fig.

Lectotype: USNM 45565 (♂, 52), Kentucky, Clinton Co., trib. of Cumberland R.; P. H. Kirsch; fall, 1889 or spring, 1890; selected and figured by Jordan and Evermann (1896, p. 1092 and 1900, fig. 463); selection herein confirmed.

Paralectotypes: Kirsch collected a total of 210 specimens from four Clinton Co. tributaries of the Cumberland in the fall of 1889 and spring of 1890: Indian Cr., 21; Spring Cr., 36; Smith Cr., 23; and Albany Branch, 130. We have been able to locate the following: SU 5116 (41, 28–51), Albany Branch, 2 *Etheostoma spectabile* removed by Knapp and recataloged as SU 62132. SU 1918 (38, 32–55), Spring Cr. This bottle was broken during the earthquake, which may account for the presence of two more specimens. All are *E. obeyense*, so perhaps Kirsch erred in his count of 36. BMNH 1892.12.30.136–139 (4, 35–41) Albany Branch, one small specimen of *E.* (*Oligocephalus*) *spectabile* removed and recataloged as BMNH 1892.12.30.140.

USNM 46207 (6, 28–43), Wayne Co., Beaver Cr., 1891 were labeled as types but were collected after the types and at a locality not mentioned in the original description and so are not types.

=*Etheostoma* (*Catonotus*) *obeyense* Kirsch.

Etheostoma olmstedi D. H. Storer, 1842, Journ. Boston Soc. Nat. Hist., vol. 4, p. 61, pl. 5, fig. 2.

Syntypes: MCZ 24781 (2♂, 46–64), Connecticut, Connecticut R. at Hartford; C. H. Olmsted; orig. MCZ 151.

=*Etheostoma* (*Boleosoma*) *olmstedi olmstedi* Storer. See Stone (1947) and Cole (1958, 1965). Described in January 1842 and so has priority over *Boleosoma tessellatum* DeKay, July 1842. See Storer (1843) and also summary of the meeting of Boston Society of Natural History for June 21, 1843 (Proc. Boston Soc. Nat. Hist., vol. 1, p. 120).

Etheostoma (*Hadropterus*) *ouachitae* Jordan and Gilbert *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 49.

Syntypes: USNM 36449 (2♂, 40–43; ♀, 43), Arkansas, Saline Co., Saline R. at Benton; Jordan and Gilbert; summer, 1884. UMMZ 187509 (1, 42), same data, orig. IU 779, then IU 4958.

Böhlke (1953, p. 74) listed SU 552 [(3, 31–47), Arkansas, Ouachita R. at Arkadelphia; Jordan and Gilbert; summer, 1884] as paratypes, but we do not feel that they should be considered part of the type series because only the Saline River locality was listed, both in the original description and in an advance list (Jordan and Gilbert, 1886, p. 13) where *Hadropterus ouachitae* appeared as a *nomen nudum*.

=*Percina* (*Imostoma*) *uranidea* (Jordan and Gilbert). See Hubbs and Black (1940).

Etheostoma pagei Meek, 1894, Amer. Nat., vol. 27, p. 957.

Lectotype: USNM 45566 (♂, 50); Missouri, spring branch, trib. of Neosho R. at U.S. Fish Hatchery, Neosho; S. E. Meek; Apr. 15, 1893; figured in Jordan and Evermann (1900, fig. 464); herein selected. D IX–12; A II, 7; LL 13+40=53; INF 8; cheeks with small patch of scales; opercles naked; well-developed tubercles on the anal fin characteristic of *E. cragini* (see Collette, 1965).

Paralectotype: USNM 197969 (♀, 40), removed from USNM 45566.

=*Etheostoma* (*Oligocephalus*) *cragini* Gilbert.

Etheostoma (*Oligocephalus*) *pallididorsum* Distler and Metcalf, 1962, Copeia, no. 3, p. 556, fig. 1.

Holotype: KU 7144 (♂, 42), Arkansas, Montgomery Co., Caddo R., 8.5 mi. W. of Black Springs; Sec. 26, T3S, R27W; Distler and Metcalf; June 28, 1961.

Paratypes: KU 6921 (21, 20–42); CU 44004 (10, 23–43), transferred to CU after orig. description; UMMZ 178997 (10, 34–41); USNM 196547 (10, 33–46); same data as holotype. KU 6158 (18, 29–46), Arkansas, Montgomery Co., Caddo R., 1 mi. W. of Caddo

Gap; Distler and Metcalf; Apr. 6, 1961. KU 6922 (8, 32–36), Arkansas, Montgomery Co., trib. of Mill Cr., 2.5 mi. W. of Caddo Gap; Distler and Metcalf; June 29, 1961.

=*Etheostoma* (*Oligocephalus*) *pallididorsum* Distler and Metcalf.

Etheostoma (*Etheostoma*) *parvipinne* Gilbert and Swain *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 59.

Holotype: USNM 36716 (1, 43), Alabama, small spring-branch trib. of Black Warrior R. at Tuscaloosa; C. H. Gilbert and J. Swain; summer, 1884.

=*Etheostoma* (*Oligocephalus*) *parvipinne* Gilbert and Swain. See Moore and Cross (1950).

Etheostoma peltatum Stauffer *in* Cope, 1864, Proc. Acad. Nat. Sci. Philadelphia, vol. 16, p. 233.

Holotype: ANSP 22627 (♂, 73), Pennsylvania, Lancaster Co., Conestoga Cr.; J. Stauffer.

=*Percina* (*Alvordius*) *peltata peltata* (Stauffer).

Etheostoma phoxocephalum Nelson, 1876, Bull. Illinois Mus. Nat. Hist., no. 1, p. 35.

Syntypes: UMMZ 187504 (2♂, 49–52), Illinois; S. A. Forbes; orig. IU 499, then IU 4702. Apparently syntypes but not labeled as such or listed in the IU catalog as types. No syntypes are in the collection of the Illinois Natural History Survey according to Smith and Bridges (1960).

=*Percina* (*Swainia*) *phoxocephala* (Nelson). See Bailey (1941).

Etheostoma (*Boleosoma*) *podostemone* Jordan and Jenkins *in* Jordan, 1889, Proc. U.S. Nat. Mus., vol. 11, p. 359, pl. 45, fig. 11.

Lectotype: USNM 39863 (♂, 45), Virginia, Roanoke R. at Allegheny Springs; Jordan and party; summer, 1888; herein selected by Dr. Charles F. Cole. D X–14; A II, 8; LL 38, complete; pectoral 12–12; infraorbital canal complete, 8 pores; preoperculomandibular pores 9; nape, cheeks, breast, and anterior part of belly naked; opercle partially scaled.

Paralectotypes: USNM 197635 (4, 40–45), removed from USNM 39863.

USNM 125477 (3, 26–42), Virginia, Roanoke R. at Roanoke and USNM 40305 (11, 24–41), Virginia, Roanoke R. are listed as paratypes in the U.S. National Museum catalog. Böhlke (1953, p. 74) considered SU 622 (8, 36–45), Virginia, Roanoke R. at Roanoke as paratypes. CAS 22857, formerly IU 7866 (12, 22–44), also from the Roanoke R. at Roanoke are labeled as paratypes. BMNH 1889.10.30.45 (1, 43), Roanoke R., U.S. Fish Comm. is labeled as "one of the types." However, Jordan and Jenkins designated USNM 39863, containing five specimens, as "type," and we believe this to be a

designation of these specimens as syntypes from the type locality of Roanoke River at Allegheny Springs. The other specimens should then be considered as material examined and not part of the type series.

=*Etheostoma* (*Boleosoma*) *podostemone* Jordan and Jenkins. See Cole (1958).

Etheostoma quapella Eigenmann and Eigenmann, 1892, Amer. Nat., vol. 26, p. 963. Described in more detail in Eigenmann (1894).

Holotype: BMNH 1892.12.30.183 (♂, 36), Canada, Manitoba, Qu'Apelle R. at Fort Qu'Apelle, Red R. system; C. H. Eigenmann; August-September 1892.

=*Etheostoma* (*Oligocephalus*) *exile* (Girard). See Jordan and Evermann (1896) and Hubbs (1926, p. 68).

Etheostoma (*Percina*) *rex* Jordan and Evermann *in* Jordan, 1889, Proc. U.S. Nat. Mus., vol. 11, p. 357, pl. 45, fig. 9.

Holotype: USNM 39858 (♂, 122), Virginia, Roanoke R., near Roanoke; Jordan; summer, 1888.

Paratype: Jordan and Evermann mentioned a second smaller specimen taken with the type, but the whereabouts of this specimen is unknown.

=*Percina* (*Percina*) *rex* (Jordan and Evermann).

Etheostoma (*Hadropterus*) *roanoka* Jordan and Jenkins *in* Jordan, 1889, Proc. U.S. Nat. Mus., vol. 11, p. 358, pl. 45, fig. 10.

Lectotype: USNM 39866 (♂, 48), Virginia; Roanoke R. at Allegheny Springs; Jordan and party; summer, 1888. USNM 39866, then containing at least five specimens, given as "type" in original description; one specimen herein selected as lectotype by Dr. Edward C. Raney. D XI–12; A II,9; LL 47; cheeks naked; breast naked except for one large modified scale; nape naked anteriorly, with a few scales posteriorly; opercles with scales at least on upper portion; suborbital bar prominent; sides with 10 vertical bars tending to form a lateral band.

Paralectotypes: USNM 197774 (4 ♂, 43–48), removed from USNM 39866. MCZ 3106 (♂, 40); CU 46469 (3, 43–48); CU 46470 (1, 48), found with CU 46469 but probably out of MCZ 3106; SU 616 (9, 41–53), one specimen of *Percina peltata* removed; and UMMZ 187514 (7, 24–45), orig. IU 1143, then IU 5619, listed in old IU catalog as type, one specimen of *Etheostoma podostemone* removed and recataloged as UMMZ 187515; all from Roanoke R. at Roanoke.

In addition to the collections from the Roanoke River at Roanoke and Allegheny Springs listed above, specimens from two other rivers are mentioned in the original description. We feel that only the speci-

mens from the Roanoke River should be considered as types, because Jordan and Jenkins designated a Roanoke series as "type," and because they specifically mentioned that the North Carolina specimens had larger scales than the Roanoke material. Therefore, we consider the following specimens from the Neuse and Tar rivers in North Carolina as other material, not as types. SU 17777 (1, 48), North Carolina, Neuse R. at Raleigh; listed by Böhlke (1953, p. 74) as a paratype. USNM 125359 (1, 42), same data; listed as a paratype in the USNM catalog. USNM 40367 (13, 29–48) and ANSP 70743–4 (2, 33–38), out of USNM 40367; same data, not listed as type in USNM catalog. UMMZ 187516 (♂, 59), orig. IU 1158, then IU 7998, part of the same series from the Neuse R.; not listed as type in IU catalog. UMMZ 187517 (1, 33), North Carolina, Tar R. at Rocky Mount; orig. IU 1144, then IU 7888, not listed as type in IU catalog; two specimens of *Percina peltata* removed and recataloged as UMMZ 187518.

=*Percina (Ericosma) crassa roanoka* (Jordan and Jenkins), according to Dr. Edward C. Raney (pers. comm.).

Etheostoma (*Rhothoeca*) *rupestre* Gilbert and Swain *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 57.

Lectotype: USNM 36695 (♀, 32), Alabama, North R., trib. of Black Warrior R., near Tuscaloosa; C. H. Gilbert and J. Swain; summer, 1884; herein selected by Dr. Chu-fa Tsai. D XI–12; A II,7; LL 52; INF 4+3; POM 9; cheeks and breast naked; opercle with 2 imbedded scales; belly scaled anteriorly; 6 dorsal blotches.

Paralectotypes: USNM 188971 (17, 23–34), removed from USNM 36695.

=*Etheostoma* (*Etheostoma*) *rupestre* Gilbert and Swain.

Etheostoma sciotense Osburn and Williamson, 1898, Ann. Rept. Ohio State Acad. Sci., vol. 6, p. 17.

Lectotype: USNM 48846 (♂, 29), Ohio, Franklin Co., Big Walnut Cr., trib. of Scioto R., near Columbus; B. C. Osburn and E. B. Williamson; June 26, 1897; herein selected. D XII–12; A II,7; LL 27+19=46; anterior third of belly naked.

Paralectotypes: USNM 197995 (♂, 24), removed from USNM 48846. A third syntype was deposited in Jordan's collection, but we have been unable to find this specimen.

=*Etheostoma* (*Nothonotus*) *tippecanoe* Jordan and Evermann. See Osburn and Williamson (1899).

Etheostoma scovellii Woolman, 1892, Amer. Nat., vol. 26, p. 260.

Lectotype: USNM 44155 (1, 33), Mexico, Río de las Conchos, Chihuahua; A. J. Woolman; August 1891; herein selected. D XI–11;

A I,7; LL 44+15=59; INF 8; interorbital pores 2; cheeks, opercles, nape, and breast naked.

Paralectotypes: USNM 197970 (2, 27–34), out of USNM 44155. BMNH 1892.12.30.186–188 (3, 29–32), same data. CAS 22856 (3, 20–25), same data; orig. IU 4841.

=*Etheostoma* (*Austroperca*) *australe* Jordan. See Hubbs (1936).

Etheostoma (*Hadropterus*) *squamatus* Gilbert and Swain *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 50.

Holotype: USNM 36652 (♂, 85), Tennessee, French Broad R. at mouth of Wolf Cr.; C. H. Gilbert and J. Swain; summer, 1884.

=*Percina (Swainia) squamata* (Gilbert and Swain).

Etheostoma squamiceps Jordan, 1877, U.S. Nat. Mus. Bull. 10, p. 11.

Lectotype: USNM 1145 (♂, 57), Kentucky, Logan Co., Russellville; Bebb; erroneously given as USNM 1345 in orig. description; herein selected. D IX–13; A II,7; LL 45+3=48; POM 10; INF incomplete; cheek and opercle covered with scales; small unpigmented fleshy bulbs around tips of first dorsal spines.

Paralectotype: USNM 197968 (♀, 54) removed from USNM 1145.

=*Etheostoma* (*Catonotus*) *squamiceps* Jordan. See Moore and Cross (1950, p. 145).

Etheostoma (*Nanostoma*) *swannanoa* Jordan and Evermann *in* Jordan, 1889, Proc. U.S. Nat. Mus., vol. 11, p. 360, pl. 45, fig. 13.

Lectotype: USNM 39861 (♀, 59), Virginia, S. Fork of Holston R. at Holstein Mills; D. S. Jordan and B. W. Evermann; summer, 1888; USNM 39861 given as type by Jordan and Evermann but then containing two specimens; lectotype herein selected by Dr. William J. Richards. D XII–12; A II,9; pectoral 16–16; LL 57; INF 8; POM 10; head, cheeks, opercles, and breast naked; vomerine teeth present; palatine teeth absent.

Paralectotypes: USNM 196777 (♀, 56), removed from USNM 39861. Jordan and Evermann designated USNM 39861 as "type," but they gave counts of the lateral line scales in 8 of the 10 specimens they had before them. Therefore, their description was apparently based on all their material, and the following are also considered paralectotypes. USNM 125490 (♀, 40), North Carolina, S. Fork of Swannanoa R. at Black Mountain; Jordan and Evermann; August 1888; orig. BF 772. SU 3507 (♀, 41), same locality as USNM 125490. Böhlke (1953, p. 74) gave the same data for SU 992 (2 ♂, 54–57) as for USNM 39861, but Jordan and Evermann reported only two specimens from this locality, so it seems likely that SU 992 is from Middle Fork of Holston R. at Marion or S. Fork of Swannanoa R. at Black Mountain. UMMZ uncat. (♂, 49), orig. IU 1169, then IU 8083. Locality in IU catalog for IU 8083 is N. Fork of Holston R. at Saltville, Va., but

Jordan and Evermann did not report this species from there. Locality in the IU catalog for 1169 is apparently S. Fork of Holston R. at Holstein Mills, Va. However, as with SU 992, this specimen must be from Middle Fork of Holston R. at Marion or S. Fork of Swannanoa R. at Black Mountain.

=*Etheostoma* (*Etheostoma*) *swannanoa* Jordan and Evermann.

Etheostoma tessellata D. H. Storer, 1845, Proc. Boston Soc. Nat. Hist., vol. 2, p. 48. Original description repeated almost verbatim in Storer (1846).

Syntypes: Alabama, Florence; received from C. A. Hentz. We have been unable to find any type material of this nominal form.

=?*Percina* (*Ericosma*) *evides* (Jordan and Copeland) according to Bailey (1959, p. 2). Although *E. tessellata* Storer is a senior synonym of *Alvordius evides* Jordan and Copeland, 1877, it is not available because *tessellata* is preoccupied in *Etheostoma* by *Boleosoma tessellatum* DeKay, 1842.

Etheostoma tippecanoe Jordan and Evermann, 1890, Proc. U.S. Nat. Mus., vol. 13, p. 3 [with fig. of *E. camurum*].

Lectotype: USNM 40080 (1, 29), Indiana, Tippecanoe R. at Marshland; B. W. Evermann; herein selected. D XII–13; A II, 8; LL 37+16=53; cheeks, prepectoral area, nape, and breast naked; opercle scaled; anterior part of belly naked along midline.

Paralectotype: USNM 197919 (1, 26), out of USNM 40080.

Four specimens are mentioned in the original description of *E. tippecanoe*. The two USNM specimens fit the original description and the current concept of *E. tippecanoe*. The other two syntypes apparently are UMMZ 187513 (2, 29–44), orig. IU 1194, then IU 4688. They have the belly completely scaled and lateral line scale counts of about 54+0=54 and 66+1=67. The larger one is a specimen of *E. camurum* and the smaller one probably is also. Jordan and Evermann (1896, p. 1090) wrote that the original description of *E. tippecanoe* was accompanied by a figure of *E. camurum* "by an error of printer." We believe that the specimen figured in Jordan and Evermann is the smaller specimen in UMMZ 187513. We count the same number of lateral line scales on the figure and the small specimen. The original drawing is labeled as a specimen 1 7/16 in. long (total length) from no. 40080. This is equal to a standard length of about 29 mm. Three sets of comments are written on the original drawing. "The drawing is bad, but it was made from specimens sent to the National Museum as types of *E. tippecanoe*." "This is probably *E. camurum*. Certainly not *E. tippecanoe*. Anal fin very bad." "Fearful and not taken from our type."

=*Etheostoma* (*Nothonotus*) *tippecanoe* Jordan and Evermann. See Bailey (1959).

Etheostoma (*Psychromaster*) *trisella* Bailey and Richards, 1963, Occ. Pap. Mus. Zool. Univ. Michigan, no. 630, pl. 1, D–E.

Holotype: UMMZ 180073 (1, 35), Alabama, Cherokee Co., Cowans Cr., trib. of Spring Cr. which flows into Coosa R. at Jordans Farm on U.S. 411, 6.7 mi. SE. of Centre; E. A. Lachner and P. S. Handwerk; Sept. 13, 1947; orig. CU 18579.

=*Etheostoma* (*Psychromaster*) *trisella* Bailey and Richards.

Etheostoma (*Etheostoma*) *tuscumbia* Gilbert and Swain *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 63.

Syntypes: SU 1003 (30, 25–48) and BMNH 1894.5.18.26–27 (2, 28–31), large spring at Tuscumbia flowing into Tennessee R.; C. H. Gilbert and J. Swain; summer, 1884; one of types figured by Jordan and Evermann (1900, fig. 467). Apparently UMMZ 187512 (44, 22–35), orig. IU 1380, then IU 5666, specimens almost completely disintegrated, are also syntypes, although they are not listed as types in the IU catalogs.

USNM 36154 with the same data also originally contained syntypes. This jar was found completely dried out in March 1937 and only fragments now remain. We believe that not many specimens were in the jar at that time because old correspondence of Barton Bean shows that at least 37 specimens from this series were sent out as "duplicate sets" to 37 high schools and other such institutions during the period Aug. 4, 1902 to Dec. 12, 1903. We assume that Bean was unaware that USNM 36154 contained types, for he certainly would not have sent type material to such institutions as the public schools of Kent, Wis.; Omaha, Nebr.; Windfall, Ind.; Galliopolis, Ohio; Helena, Mont.; Savanna, Ill.; Northwood, Iowa; Lovington, Ill.; Wiconisco, Pa.; the Free Public Library of Vinton, Iowa; the San Antonio Female College, Tex.; and the Ursuline Seminary, New Rochelle, N.Y.!

Böhlke (1953) and Bailey and Richards (1963) gave USNM 36154 as holotype. Böhlke listed SU 1003 as paratypes. From the number of specimens distributed out of USNM 36154, it is clear that all of the original type material should be listed as syntypes.

Böhlke erroneously listed SU 2683 (2, 27–28) as paratypes, but these specimens were collected at Florence, Ala., a locality not mentioned in the original description. Bailey and Richards (1963) listed USNM 43484 and 63115 and UMMZ 43484 as paratopotypes, but this material was collected by Kirsch in 1889, subsequent to the original description of *E. tuscumbia*, and so they are merely topotypes.

=*Etheostoma* (*Psychromaster*) *tuscumbia* Gilbert and Swain. See Bailey and Richards (1963).

Etheostoma (*Cottogaster*) *uranidea* Jordan and Gilbert *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 48.

Syntypes: USNM 36413 (8, 31–46), Arkansas, Washita (Ouachita) R. at Arkadelphia; Jordan and Gilbert; summer, 1884. One specimen of *Etheostoma histrio* removed and recataloged as USNM 197419.

=*Percina* (*Imostoma*) *uranidea* (Jordan and Gilbert).

Etheostoma variata Kirtland, 1841, Boston Journ. Nat. Hist., vol. 3, p. 274, pl. 2, fig. 2.

Types: Type locality—Mahoning R., Ohio. We have been unable to find any extant type material.

=*Etheostoma* (*Etheostoma*) *variatum* Kirtland.

Etheostoma (*Ulocentra*) *verecundum* Jordan and Evermann *in* Jordan, 1889, Proc. U.S. Nat. Mus., vol. 11, p. 360, pl. 45, fig. 12.

Holotype: USNM 39862 (1, 44), Virginia, Middle Fork of Holston R., 5 mi. S. of Glade Spring; summer, 1888.

=*Etheostoma* (*Ulocentra*) *simoterum* (Cope).

Etheostoma (*Etheostoma*) *whipplei alabamae* Gilbert and Swain *in* Gilbert, 1887, Proc. U.S. Nat. Mus., vol. 10, p. 62.

Syntypes: USNM 36735 (6, 25–30), Alabama, Black Warrior R., near Morris; C. H. Gilbert and J. Swain; summer, 1884. USNM 36687 (2, 29–41), and SU 2318 (2, 35–41), Alabama, North R., trib. of Black Warrior R., near Tuscaloosa; Gilbert and Swain; summer, 1884.

=*Etheostoma* (*Oligocephalus*) *whipplii artesiae* (Hay). See Hubbs and Black (1941).

Etheostoma wrighti McCormick, 1892, Bull. Oberlin College Lab., no. 2, p. 30.

Holotype: Oberlin Coll. Mus. (1, 2⅝ in.), Ohio, Lorain Co., Vermillion R., trib. of Lake Erie; L. M. McCormick; Apr. 9, 1892. This specimen was not present in the Oberlin collection in mid-January 1931, according to Trautman (1957, p. 548), and has not been located.

=*Percina* (*Imostoma*) *shumardi* (Girard), according to Jordan and Evermann (1896, p. 1047) and Jordan, Evermann, and Clark (1930, p. 285). The type locality and original description support this conclusion, but Trautman (1957, p. 548) has suggested that *E. wrighti* may be a hybrid between *P. shumardi* and *P. caprodes* or *P. maculata*, or between *P. caprodes* and *P. maculata*.

Etheostoma zonale arcansanum Jordan and Gilbert, 1886, Proc. U.S. Nat. Mus., vol. 9, p. 5.

Lectotype: USNM 36410 (♀, 38), Arkansas, Washita (Ouachita) R. at Arkadelphia; D. S. Jordan and C. H. Gilbert; summer, 1884; herein selected by Dr. Chu-fa Tsai. D XI–11; A II,7; LL 56; INF 4+3; POM 10; cheeks, opercles, and belly completely covered with scales; a few scales on breast; 6 dorsal blotches.

Paralectotypes: USNM 188970 (25, 24–36), removed from USNM 36410. UMMZ 187506 (7, 25–36), orig. IU 777, then IU 4543, same data. USNM 36249 (2, 40–43), Missouri, Spring Fork of Neosho R., near Carthage; Gilbert and S. E. Meek. USNM 36275 (1, 41), Missouri, James Fork of White R., near Marshfield; Gilbert and Meek. USNM 36399 (2, 30–31), Oklahoma, Poteau R., W. of Hackett City, Ark.; Jordan and Gilbert; summer, 1884. USNM 36447 (15, 21–35), Arkansas; Saline R., near Benton, just above railroad bridge; Jordan and Gilbert; summer, 1884; six specimens of *Etheostoma r. radiosum* removed. UMMZ 187507 (4, 22–29), same locality, orig. IU 779, then IU 4546; one specimen of *E. histrio* removed and recataloged as UMMZ 187508.

=*Etheostoma* (*Etheostoma*) *zonale zonale* (Cope), according to Dr. Chu-fa Tsai (pers. comm.).

Hadropterus evermanni Moenkhaus, 1903, Bull. U.S. Fish Comm., vol. 22, p. 397, fig.

Holotype: Given as IU 9785 (1, 77), Indiana, Lake Tippecanoe in original description, but we have not located this specimen.

Paratypes: USNM 50834 (1, 48) and USNM 126919 (1, 48); 1899; orig. BF 2742; Lake Tippecanoe. We have not found the paratype originally cataloged as IU 9786 nor the specimen said to have been deposited at Stanford University. There appears to be no record of a paratype having been deposited in the British Museum, and Collette could find none among the type material or in the regular collections in October 1963.

=*Percina* (*Percina*) *caprodes semifasciata* (DeKay) × *Percina* (*Alvordius*) *maculatus* (Girard). See Hubbs (1926, p. 60). The two USNM specimens and the figure of the holotype appear to be intermediate between *P. caprodes* and *P. maculatus* in such characters as color pattern, number of lateral line scales, juncture of gill membranes, nape squamation, and snout shape. Trautman (1948) has also reported this natural hybrid combination from southwestern Lake Erie and tributaries that enter the lake in this region.

Hadropterus maculatus Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 100.

Lectotype: USNM 1157 (♂, 69), Maryland, Anne Arundel Co., eastern trib. of Potomac R.; J. H. Clark; selected herein by Dr. Edward C. Raney. D XIV–12; A II,9; pectoral rays 14–13; LL 55;

scales above and below lateral line 7–10; caudal peduncle scales 21; cheeks sparsely scaled; opercles scaled; preopercles and nape naked; 11 enlarged scales on midline of belly. This specimen is also the type of *Hadropterus notogrammus* Raney and Hubbs.

Paralectotype: USNM 197773 (♂, 56) removed from USNM 1157.

MCZ 24525 (2 ♂, 60–64), originally USNM 1303, then MCZ 129, and MCZ 24546 (2 ♂, 54–55), originally USNM 1157, then MCZ 130, have the same data and were probably part of the original series; however, they were received from the USNM in 1853, but the description was not published until 1859, so it is doubtful if Girard had the specimens before him at the time of the original description. Therefore, the four specimens had best be considered only as topotypes, both of *H. maculatus* Girard and *H. notogrammus* Raney and Hubbs.

=*Percina* (*Alvordius*) *notogramma notogramma* (Raney and Hubbs) because *maculatus* is preoccupied by *Alvordius maculatus* Girard. See Hogarth and Woolcott (1966).

Hadropterus maxinkuckiensis Evermann, 1900, Rept. U.S. Fish Comm., vol. 25., p. 366, pl. 17.

Holotype: USNM 49378 (♂, 75), Indiana, Marshall Co., Aubeenaubee Cr., E. inlet of L. Maxinkuckee, 0.5 mi. from lake; Evermann and Scovell; Aug. 4, 1899.

=*Percina* (*Alvordius*) *maculata* (Girard). See Hubbs and Black (1954).

Hadropterus nasutus Bailey, 1941, Occ. Pap. Mus. Zool. Univ. Michigan, no. 440, figs. 1, 3.

Holotype: UMMZ 132898 (♂, 66), Arkansas, Searcy Co., Middle Fork, Little Red R., trib. of White R., near bridge on U.S. 65, 1.5 mi. SE. of Leslie; R. M. Bailey and M. E. Davis; Aug. 17, 1940.

Paratype: USNM 198146 (♀, 63), same data as holotype; orig. ISC 2.

=*Percina* (*Swainia*) *nasuta* (Bailey).

Hadropterus nigrofasciatus Agassiz, 1854, Amer. Journ. Sci. and Arts, ser. 2, vol. 17, p. 305.

Lectotype: MCZ 24603 (♂, 103), Alabama, near Mobile, A. Stein; orig. out of USNM 1197, then MCZ 122; herein selected. D XII–12; A II, 9; LL 50; preopercle without serrae; branchiostegal membranes slightly connected; nape, cheek, opercle, and breast completely scaled.

Paralectotypes: MCZ 43094 (11, 41–98) and UMMZ 86300 (3, 51–77), removed from MCZ 24603. USNM 1197 (♂, 74; ♀, 82), same data.

=*Percina* (*Hadropterus*) *nigrofasciata nigrofasciata* (Agassiz). See Crawford (1956).

Hadropterus nigrofasciatus westfalli Fowler, 1942, Notulae Naturae, no. 107, p. 9, fig. 9.

Holotype: ANSP 69980 (♂, 44), Florida, Wekiva R., trib. of St. Johns R.; M. J. Westfall, Jr.; Mar. 8, 1941.

=*Percina* (*Hadropterus*) *nigrofasciata nigrofasciata* (Agassiz). See Crawford (1956).

Hadropterus notogrammus Raney and Hubbs, 1948, Occ. Pap. Mus. Zool. Univ. Michigan, no. 512, pl. 1, figs. 1–2; pl. 2, figs. 1–2; a replacement name for *Hadropterus maculatus* Girard which was preoccupied.

Types: Raney and Hubbs designated UMMZ 144696 [(♂, 67), Virginia, Rockbridge Co., South R., 5 mi. E. of Lexington, L. C. Pettit; May 17, 1941; orig. CU 9719] as holotype; and USNM 40242; CU 8324, 9708, 10138, 4909; UMMZ 144697 and 95194 as paratypes. However, these designations are not valid because the type specimens for a new name must be the same as for the original name (Art. 72 d, Int. Code Zool. Nomencl.), in this case USNM 1157, lectotype and USNM 197773, paralectotype of *Hadropterus maculatus* Girard.

=*Percina* (*Alvordius*) *notogramma notogramma* (Raney and Hubbs). See Hogarth and Woolcott (1966).

Hadropterus oxyrhynchus Hubbs and Raney, 1939, Occ. Pap. Mus. Zool. Univ. Michigan, no. 396; pl. 1.

Holotype: UMMZ 118422 (♂, 80), West Virginia, Randolph Co., Cheat R. at Cheat Bridge; E. C. Raney; June 25, 1935.

Paratypes: USNM 56862 (♂, 63), West Virginia, Cheat R. at Raines; W. P. Hay; Sept. 12, 1899. UMMZ 118482 (4, 44–54), Virginia, Wythe Co., New R., above Jacksons Ferry; C. L. Hubbs and family; Aug. 21, 1936. UMMZ 119268 (7, 20–33), West Virginia, New R. at Prince; J. Addair; July 26, 1935. UMMZ 119246 (2, 30–31), West Virginia, New R., 2 mi. below Hinton; Addair; July 18, 1935.

=*Percina* (*Swainia*) *oxyrhyncha* (Hubbs and Raney). See Bailey (1941).

Hadropterus palmaris Bailey, 1940, Journ. Washington Acad. Sci., vol. 30, no. 12, p. 525, fig. 1.

Holotype: UMMZ 126179 (♂, 66), Georgia, Lumpkin Co., Etowah R., trib. of Coosa R., just above bridge on U.S. 19, 4 mi. SW. of Dahlonega; R. M. and M. K. Bailey; Aug. 25, 1939.

Paratypes: UMMZ 126180 (2, 45–67), USNM 117881 (2 ♂, 61–68) and USNM 198145 (♂, 63), orig. ISC 1, same data as holotype. UMMZ 111232 (1, 59) and UMMZ 111133 (22, 31–63), Alabama, Saugahatchee Cr., trib. of Tallapoosa R.; F. E. Guyton; Oct. 24,

1930. UMMZ 111234 (4), Alabama, Macon Co., 3 mi. E. of Tuskegee; Guyton; June 3, 1931; there is a note in the UMMZ card file that these specimens were not located during a check several years ago, and we were unable to find them in May 1964.

=*Percina* (*Ericosma*) *palmaris* (Bailey). See Crawford (1954).

Hadropterus pantherinus Moore and Reeves, 1955, Copeia, no. 2, p. 90, pl. 1.

Holotype: UMMZ 167120 (♀, 63), Oklahoma, Pushmataha Co., Little R., W. of Pickens, sec. 1, T. 2 S., R. 20 E.; G. A. Moore and J. D. Reeves; Mar. 25, 1951.

Paratypes: UMMZ 81185 (1, 59), Arkansas, Polk Co., trib. of Mountain Fork R.; June 29, 1927; Univ. Oklahoma Mus. Exped. OAM 2559 (1, 38), Oklahoma, McCurtain Co., Mountain Fork R., Beavers Bend State Park, sec. 10, T. 5 S., R. 25 E.; Moore and class; Aug. 21, 1948. UMMZ 167122 (3, 22–27), same locality as OAM 2559, Moore and F. B. Cross; May 30, 1948. USNM 198108 (1, 35), Oklahoma, LeFlore Co., Little R., S. of Honobia, sec. 30, T. 1 N., R. 22 E.; A. P. Blair; orig. TUC uncat. MCZ 38491 (1, 41), Oklahoma, McCurtain Co., Mountain Fork R. at Smithville, sec. 13, T. 1 S., R. 25 E.; Moore and C. C. Rigney; Aug. 17–19, 1948. UMMZ 167121 (6, 48–72), same locality as UMMZ 167120; Moore and Reeves; Mar. 25, 1951. OAM 4948 (1, 52), Oklahoma, McCurtain Co., Glover R. in sec. 13, T. 3 S., R. 22 E.; Moore and Reeves; Mar. 25, 1951.

=*Percina* (*Alvordius*) *pantherina* (Moore and Reeves).

Hadropterus scierus Swain, 1883, Proc. U.S. Nat. Mus., vol. 6, p. 252.

Lectotype: USNM 34350 (♂, 57), Indiana, Monroe Co., Bean Blossom Cr., trib. of White R., 6 mi. N. of Bloomington; D. S. Jordan and J. Swain; herein selected. D XIII–14; A II,10; LL complete, 71; preopercle serrate; branchiostegal membranes moderately joined.

Paralectotypes: Two specimens were mentioned in the original description, but we do not know if the second syntype is still in existence.

=*Percina* (*Hadropterus*) *sciera sciera* (Swain). See Hubbs and Black (1954).

Hadropterus scierus apristis Carl L. Hubbs and Clark Hubbs *in* Clark Hubbs, 1954, Amer. Mid. Nat., vol. 52, no. 1, p. 211.

Holotype: UMMZ 162377 (♂, 68), Texas, Caldwell-Guadalupe cos., San Marcos R., 0.5 mi. SE. of Prairie Lea; K. C. Jurgens and R. C. MacEwan; Feb. 11, 1950.

Paratypes: UMMZ 162378 (40, 46–74), same data as holotype. USNM 160628 (6 ♀, 48–61; 5 ♂, 57–83), Texas, Caldwell-Guadalupe cos., San Marcos R. at Stairtown; Jurgens and MacEwan; Feb. 18, 1950, orig. TNHC 255. USNM 160629 (11 ♀, 50–69, 1 ♂, 73),

Texas, Caldwell-Guadalupe cos., San Marcos R., 0.5 mi. S. of Prairie Lea; Jurgens and W. Brown; Feb. 8, 1950; orig. TNHC 180. UMMZ 162374 (9, 41–72), Texas, Hays Co., San Marcos R., below cotton gin near State Fish Hatchery; C. Hubbs and Jurgens; Sept. 26, 1949; orig. TNHC 21. FMNH 46194 (13, 27–64), Texas, San Marcos R., 3 mi. SE. of State Fish Hatchery; Jurgens and Hubbs; Sept. 26, 1949; orig. TNHC 40; specimens partly dried out; erroneously given as FMNH 46195 in original description. OAM 4707 (8, 42–63), Texas, Caldwell-Guadalupe cos.; San Marcos R. at Fentress; Jurgens and Brown; Nov. 18, 1949. TNHC 90 (15, 28–56), Texas, Caldwell-Guadalupe cos.; San Marcos R., 0.5 mi. N. of Staples; Jurgens; Nov. 11, 1949. TNHC 501 (1, 75), Texas, Gonzales Co., Guadalupe R. at rt. 80, S. of Belmont; Hubbs; Apr. 6, 1950. TNHC 162 (1, 76), Texas, Gonzales Co., Guadalupe R., ¼ mi. SE. of Gonzales; Jurgens. TNHC 314 (1, 66), Texas, Comal Co., Guadalupe R. at Hunter; Jurgens and Brown; Mar. 22, 1950. SU 17311 (3), Texas, Caldwell-Guadalupe cos.; San Marcos R. at Stairtown; Mar. 25, 1950; Jurgens and W. Faber; orig. TNHC 333; specimens now completely disintegrated. TAMC 1F–13–g–10 (16, 35–78), Texas, Caldwell-Guadalupe cos., San Marcos R. at Martindale; Jurgens and Brown; Nov. 6, 1949. TAMC 1F–13–g–4 (1, ?), Texas, Gonzales Co., Guadalupe R., 0.5 mi. S. of Gonzales; F. T. Knapp; Nov. 26, 1950; dried out.

=*Percina* (*Hadropterus*) *sciera apristis* (Hubbs and Hubbs).

Hadropterus scierus serrula Jordan and Gilbert, 1886, Proc. U.S. Nat. Mus., vol. 9, p. 16.

Lectotype: USNM 36481 (♂, 50), Texas, Sabine R., 5 mi. S. of Longview; D. S. Jordan and C. H. Gilbert; summer, 1884; herein selected. D XII–14; A II,9; LL complete, 65; preopercular serrae 10–13.

Paralectotypes: USNM 198010 (5, 43–47), removed from USNM 36481.

Jordan and Gilbert had other material of their new variety from the Trinity River at Dallas, Tex. (USNM 36476) and from the Rio Lampasas at Belton, Tex. Evermann and Kendall (1894, pp. 88, 113) gave the type locality as the Sabine River at Longview. Jordan and Evermann (1896, p. 1038) gave the "type" as USNM 36481 and the type locality as the Red River at Fulton, Ark. Hubbs and Black (1954, p. 205) pointed out that Jordan and Evermann did not collect *serrula* in the Red River and no. 36481 is from the Sabine. Hubbs and Black designated USNM 36481 "as the sole lectotypes." We feel that Jordan and Evermann meant USNM 36481 to be the "types" in the first place, so Hubbs and Black's action was not necessary. Böhlke (1953, p. 74) listed SU 3934 from Rio Lampasas as

paratypes and USNM 36481 as holotype. SU 3934 cannot be paratypes because USNM 36481 from the Sabine contains the entire type series as originally indicated by Jordan and Gilbert and confirmed by Evermann and Kendall (1894), Jordan and Evermann (1896), and Hubbs and Black (1954).

=*Percina* (*Hadropterus*) *sciera* ssp. Further study is necessary to determine whether or not *serrula* can be recognized as a valid subspecies. See Hubbs and Black (1954) and Hubbs (1954).

Hadropterus sellaris Radcliffe and Welsh, 1913, Bull. U.S. Bur. Fish., vol. 32, p. 31, pl. 18.

Holotype: USNM 74346 (♀, 39), Maryland, Harford Co., Swan Cr., near Havre de Grace; L. Radcliffe and W. W. Welsh; May 2, 1912.

Paratype: USNM 74347 (♀, 39), same data as holotype.

=*Etheostoma* (*Etheostoma*) *sellare* (Radcliffe and Welsh). See Hubbs and Black (1940) and Knapp et al. (1963).

Hadropterus shumardi Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 100.

Holotype: USNM 1330 (♂, 48), Arkansas, Arkansas R., near Ft. Smith; G. C. Shumard.

=*Percina* (*Imostoma*) *shumardi* (Girard).

Hadropterus spillmani Hay, 1881, Proc. U.S. Nat. Mus., vol. 3, p. 491.

Lectotype: USNM 27432 (♂, 64), Mississippi, Clarke Co., Chickasawha R. at Enterprise; O. P. Hay; March–April 1880; listed as type by Jordan and Evermann (1896, p. 1039); selection herein confirmed. D XII–12; A II,9; pectoral 14–15; LL 54; scales above and below lateral line 6–11; cheeks, opercles, breast, and nape completely covered with scales; several serrations on preopercle.

Paralectotypes: The original description was based on "several specimens" of which some were placed "in Professor Jordan's collection" and the remainder in Butler University. These specimens are apparently no longer in existence.

=*Percina* (*Hadropterus*) *nigrofasciata nigrofasciata* (Agassiz). See Crawford (1956, p. 41).

Hadropterus tessellatus Jordan, 1877, U.S. Nat. Mus. Bull. 10, p. 7.

Lectotype: USNM 1199 (1, 47), Pennsylvania, Allegheny R. at Foxburg; S. F. Baird; herein selected. D XIII–12; A II,9; LL 51; pectoral rays 16; INF 8, fourth pore opening at the end of a dorsally directed tube beneath the eye; POM 10; four blackish dorsal saddles; cheeks naked; opercles and breast with few scales.

Paralectotype: USNM 197416 (1, 29), removed from USNM 1199. This smaller specimen was found in the bottle labeled USNM 1199. This might not be part of the type material because Jordan referred

to "a specimen of an Etheostomoid" and "length of type 2½ inches" and so may have examined only the larger specimen. However, Jordan (1885, p. 163) mentioned two specimens as "the types of *Hadropterus tessellatus*."

=*Etheostoma* (*Etheostoma*) *variatum* Kirtland. See Jordan (1885) and Hubbs and Black (1941, p. 15).

Hololepis barratti appalachia J. R. Bailey, 1950, Copeia, no. 4., p. 312.

Holotype: UMMZ 156224 (♂, 37), North Carolina, Buncombe Co., pond S. of mouth of Bent Cr., 300 ft. W. of French Broad R., 7 mi. SSW. of Asheville; F. Cross and Y. Barber; July 14, 1947.

Paratypes: UMMZ 156225 (48, 13–42), same data as holotype. CU 18444 (3, 30–40), and DU uncat. (6♀, 19–40), same locality; June 7, 1949; J. R. Bailey.

=*Etheostoma* (*Hololepis*) *fusiforme barratti* (Holbrook). See Collette (1962).

Hololepis collis Hubbs and Cannon, 1935, Misc. Publ. Mus. Zool. Univ. Michigan, no. 30, p. 52, pl. 1, fig. 7.

Holotype: UMMZ 94560 (♂, 40), South Carolina, York Co., creek near York; D. Ameel; Nov. 11, 1931.

Paratypes: UMMZ 107085 (♀, 40), same data as holotype. UMMZ 94546 (♂, 36), South Carolina, York Co., Steel Cr., trib. of Catawba R. at Rock Hill; Ameel; Nov. 11, 1931.

=*Etheostoma* (*Hololepis*) *collis collis* (Hubbs and Cannon). See Collette (1962).

Hololepis erochrous Cope, 1864, Proc. Acad. Nat. Sci. Philadelphia, vol. 16, p. 233.

Lectotype: MNHN 4669 (1, 33), New Jersey, Delaware drainage, Brown's Mills; herein selected. D IX–10; A II, about 7; LL 17+31=48; cheeks, nape, breast scaly; interorbital naked. Fowler (1907), Hubbs and Cannon (1935), and Collette (1962) were unable to locate any types of this form at ANSP. Vaillant (1873, p. 134) wrote "L'exemplaire suivant envoyé à la collection du Muséum par cet auteur . . . ." with reference to its receipt from Cope in 1867. Figured in Vaillant, pl. 3, fig. 9.

=*Etheostoma* (*Hololepis*) *fusiforme fusiforme* (Girard). See Collette (1962).

Hololepis fusiformis atraquae Hubbs and Cannon, 1935, Misc. Publ. Mus. Zool. Univ. Michigan, no. 30, p. 68, pl. 1, fig. 11.

Holotype: UMMZ 107090 (♂, 31), Maryland, Prince Georges-Charles Co. line, Mattawoman Cr.; C. L. Hubbs, G. S. Myers, and E. D. Reid; May 21, 1933.

219-948—66——4

Paratypes: UMMZ 107089 (15, 27–32), USNM 117547 (2, 29–30), and USNM 92946 (4, 32–34), same data as holotype.

=*Etheostoma* (*Hololepis*) *fusiforme fusiforme* (Girard). See Collette (1962).

Hololepis fusiformis insulae Hubbs and Cannon, 1935, Misc. Publ. Mus. Zool. Univ. Michigan, no. 30, p. 83, pl. 1, fig. 15.

Holotype: MCZ 28274 (1, 24), Massachusetts, Nantucket Is., Gibbs Pond; H. Allen; "rec'd. Aug. 10, 1893."

Paratypes: UMMZ 86601 (2, 22–25) and MCZ 42078 (8, 16–26), same data as holotype. The latter was originally MCZ 33547, but because that number has also been used for a *Girardinus*, the paratypes have been recataloged.

=*Etheostoma* (*Hololepis*) *fusiforme fusiforme* (Girard). See Collette (1962).

Hololepis fusiformis metae-gadi Hubbs and Cannon, 1935, Misc. Publ. Mus. Zool. Univ. Michigan, no. 30, p. 81, pl. 1, fig. 14.

Holotype: USNM 77860 (♂, 32), Massachusetts, Barnstable Co., Osterville, Tempies Pond; V. Edwards; Nov. 12, 1902.

Paratypes: USNM 94683 (36, 27–43) and UMMZ 107093 (2, 31–38), same data as holotype.

=*Etheostoma* (*Hololepis*) *fusiforme fusiforme* (Girard). See Collette (1962).

Hololepis saludae Hubbs and Cannon, 1935, Misc. Publ. Mus. Zool. Univ. Michigan, no. 30, p. 50, pl. 1, fig. 6.

Holotype: UMMZ 107079 (1, 21), South Carolina, Saluda Co., Richland Cr., trib. of Lake Murray, 10 mi. SE. of Saluda; E. M. Burton; June 21, 1933.

Paratypes: UMMZ 107078 (2, 20–22), CM 33.149.1 (4, 16–22), and USNM 94685 (1, 21), same data as holotype. FMNH 38331 (1, 18), out of CM 33.149.1. UMMZ 107077 (4, 17–21) and CM 33.139.1 (4, 14–16), South Carolina, Saluda Co., Moore's Cr., trib. of Lake Murray, 6 mi. SE. of Saluda; Burton; June 21, 1933.

=*Etheostoma* (*Hololepis*) *saludae* (Hubbs and Cannon). See Collette (1962).

Hololepis serrifer Hubbs and Cannon, 1935, Misc. Publ. Mus. Zool. Univ. Michigan, no. 30, p. 31, pl. 1, fig. 2.

Holotype: UMMZ 107053 (♂, 53), North Carolina, Wake Co., Buffalo Cr. at Wendell; C. S. Brimley and Harris; Nov. 19, 1925.

Paratypes: The following are from North Carolina: USNM 93132 (♀, 45) and USNM 93133 (2♂, 43), Wilmington; W. P. Seal; March 1900. USNM 86163 (♀, 38), Wilmington; W. W. Welsh; Dec. 26, 1916. UMMZ 107056 (2, 33–36) and USNM 200333 (1, 34), Bertie

Co., Windsor; C. S. Brimley and W. B. Mabee; Oct. 21, 1924. UMMZ 107061 (1, 33), Martin Co., Williamston; Brimley; Oct. 23, 1924. UMMZ 107065 (♂, 40), Martin Co.; Jamesville; Brimley; Oct. 23, 1924. UMMZ 107054 (2, 34–38) and USNM 200335 (2, 38), Wake Co., Little R. at Wendell; Brimley and Mabee; Dec. 28, 1923. UMMZ 107064 (1, 33), same locality; Brimley and Harris; Nov. 19, 1925. UMMZ 94658 (2, 34–37), same locality; Brimley and Brady; Nov. 30, 1931. UMMZ 107060 (2, 37–43) and USNM 200330 (1, 38), Wake Co., Buffalo Cr. at Wendell; Brimley and Mabee; Nov. 30, 1923. UMMZ 107062 (♂, 37), same data; Mar. 30, 1925. UMMZ 107063 (5, 34–39) and USNM 200331 (5, 36–48), Johnston Co., Buffalo Cr., near Archer; Brimley and Mabee; Nov. 26, 1923. UMMZ 107066 (1, 37), Harnett Co., Black R. at Dunn; Brimley and Mabee; Nov. 19, 1923. UMMZ 107055 (3, 37–47) and USNM 200336 (4, 38–41), Johnston Co., Mingo Cr.; Brimley and Mabee; Nov. 19, 1923. UMMZ 107067 (3, 33–38) and USNM 200337 (3, 30–35), same data, Dec. 10, 1924. UMMZ 107059 (♂, 39) and USNM 200334 (2, 36–39), Harnett Co., Lillington; Brimley and Mabee; Dec. 11, 1923. UMMZ 107058 (1, 35), Harnett Co., Upper Little R. at Bunlevel; Brimley and Mabee; Dec. 11, 1923. UMMZ 107057 (1, 32) and USNM 200332 (1, 35), Sampson Co., Clinton; Brimley and Mabee; Nov. 20, 1923. UMMZ 70705 (1, 26), Moore Co., Lakeview; R. E. Coker; June 12, 1926. UMMZ 107073 (♀, 44), same data; Nov. 11, 1934. The following are from South Carolina: CM 34.215.1 (♂, 43), Marlboro Co., 6 mi. N. of Bennettsville; E. M. Burton; July 25, 1934. CM 33.260.1 (2, 32–34), Richland Co., Cedar Cr. on Leesville Rd.; Burton; Aug. 31, 1933. CM 33.264.1 (1, 32), Richland Co., old dam, near Wilson's Mill; Burton; Aug. 31, 1933. CM 34.179.1 (2, 33) and UMMZ 107075 (2, 32–33), Bamberg Co., Little Salkahatchie R., 3.5 mi. N. of Ehrhardt; Burton; July 11, 1934. CM 34.177.1 (2, 31–34) and UMMZ 107074 (2, 26–33), Colleton Co., Little Salkahatchie R., near Bell's Crossroads; Burton; July 11, 1934.

=*Etheostoma* (*Hololepis*) *serriferum* (Hubbs and Cannon). See Collette (1962).

Hololepis thermophilus Hubbs and Cannon, 1935, Misc. Publ. Mus. Zool. Univ. Michigan, no. 30, p. 63, pl. 1, fig. 10.

Holotype: UMMZ 107072 (♂, 32), North Carolina, Harnett Co., millpond at Kipling; C. S. Brimley and W. B. Mabee; Dec. 11, 1923.

Paratypes: UMMZ 107071 (2, 30) and USNM 200239 (2, 28–30), same data as holotype. UMMZ 107070 (♂, 31), North Carolina, Wake Co., Buffalo Cr. at Wendell; Brimley and Mabee; Nov. 26, 1923. UMMZ 107069 (1, 29), same data; Nov. 30, 1923. UMMZ

107068 (1, 29), North Carolina, Johnston Co., Big Swamp at Kenly; Brimley and Mabee; Nov. 26, 1923. USNM 52060 (8, 27–34) and USNM 52071 (6, 27–29), North Carolina, Wilmington; W. P. Seal. USNM 86165 (9, 26–30), North Carolina, ditch at Wilmington; W. W. Welsh; Dec. 29, 1916. USNM 86160 (2, 22–24), North Carolina, lake at Wilmington; "Grampus"; Jan. 3, 1917.

=*Etheostoma* (*Hololepis*) *fusiforme fusiforme* (Girard). See Bailey and Frey (1951) and Collette (1962).

Hololepis thermophilus oligoporus Bailey and Frey, 1951, Journ. Elisha Mitchell Sci. Soc., vol. 67, no. 2, p. 193, pl. 6, figs. 9–18; pl. 7, figs. 11–19; pl. 8, figs. 5–11.

Holotype: UMMZ 161969 (♂, 25), North Carolina, Bladen Co., Jones Lake; North Carolina lake survey; Sept. 10, 1947.

Paratypes: All from Bladen Co., N.C., collected by the North Carolina lake survey in 1947. Jones Lake: UMMZ 161968 (44, 15–27), same data as holotype. UMMZ 161970 (2, 21–23), June 17. UMMZ 161971 (3, 20–24), Aug. 26. UMMZ 161972 (38, 19–27), Aug. 28. DU uncat. (15, 21–25), Aug. 28. Salters Lake: UMMZ 161974 (46, 19–25), Sept. 9. UMMZ 161973 (2, 21), June 27. UMMZ 161975 (2, 18–20), July 4. Singletary Lake: UMMZ 161965 (2, 22–25), July 17. UMMZ 161966 (25, 17–27), Sept. 5. UMMZ 161967 (5, 22–25), Sept. 7.

=*Etheostoma* (*Hololepis*) *fusiforme fusiforme* (Girard). See Collette (1962).

Hololepis zonifer Hubbs and Cannon, 1935, Misc. Publ. Mus. Zool. Univ. Michigan, no. 30, p. 47, pl. 1, fig. 5.

Holotype: UMMZ 88803 (♀, 31), Alabama, Montgomery Co., pools of Catoma Cr., 5 mi. SW. of Montgomery; E. P. Creaser and H.R. Becker; Sept. 18, 1929.

Paratype: UMMZ 88822 (♀, 25), Alabama, Lowndes Co., Big Swamp Cr., 25 mi. SW. of Montgomery; Creaser and Becker; Sept. 18, 1929.

=*Etheostoma* (*Hololepis*) *zoniferum* (Hubbs and Cannon). See Collette (1962).

Hyostoma blennioperca Cope, 1868, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 6, p. 215.

Lectotype: ANSP 14026 (♂, 85), Virginia; Holston R.; E. D. Cope; October 1867. Fowler (1907, p. 522) designated number 14026 as "type" but left it mixed with the other syntypes in the bottle. However, he mentioned that "the type as here restricted is evidently the largest in the collection." Therefore, the largest specimen is herein confirmed as lectotype by Dr. Robert V. Miller. D XIV–13;

A II, 8; LL 74; pectoral rays 15–15; cheeks and opercle, completely covered with scales; snout blunt, not overhung.

Paralectotypes: ANSP 14027–35 (8, 47–60), same data as lectotype. ANSP 14004 (1, 54), Virginia, Wythe Co., trib. of Kanawha R.; Cope; 1867. ANSP 14006–08 (3, 51–61), Virginia, Wythe Co., Walker's Cr., trib. of Kanawha R.; Cope; 1867. ANSP 14020–25 (6, 54–66), Virginia, Sinking Cr., trib. of Kanawha R.; Cope; 1867.

By selecting ANSP 14026 as lectotype, Fowler made the name *H. blennioperca* Cope applicable to the Holston River population of *E. blennioides*. *H. blennioperca* thereby becomes a synonym of *E. b. newmanii*, according to Miller (1964). However, the Kanawha River specimens represent the upper Ohio River subspecies *E. b. blennioides*, according to Miller (1964).

=*Etheostoma* (*Etheostoma*) *blennioides newmanii* (Agassiz). See Miller (1964).

Hyostoma Newmanii Agassiz, 1854, Amer. Journ. Sci. and Arts, vol. 17 p. 305.

Lectotype: USNM 1865 (♂, 93), Alabama, near Huntsville; Newman; herein selected by Dr. Robert V. Miller. D XIV–12; A II, 7; pectoral rays 15–15; LL 71; cheeks, opercles, and belly completely covered with scales.

Paralectotypes: MCZ 24602 (5, 68–106), orig. out of USNM 1865, then MCZ 237. UMMZ 86764 (1, 106), out of MCZ 24602.

=*Etheostoma* (*Etheostoma*) *blennioides newmanii* (Agassiz). See Miller (1964).

Hyostoma simoterum Cope, 1868, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 6, p. 215, color pl. 24, fig. 5.

Syntypes: ANSP 14039–54 (16, 35–51), Virginia, Holston R.; E. D. Cope; October 1867. ANSP 14036–8 (3, 57–62); ANSP 14499–503 (5, 40–48); ANSP 5368–74 (7, 37–52); USNM 36604 (♂, 40); MNHN 4856 (1, 53), all with same data. Fowler (1907, p. 524) erroneously designated ANSP 14036 as lectotype and ANSP 14037–38 as paralectotypes of *Poecilichthys zonalis* Cope. These specimens are syntypes of *H. simoterum* as is clear from Fowler's figure 8 (see *P. zonalis*). With reference to the MNHN specimen, Vaillant (1873, p. 100) wrote "Cette espèce est représentée au Museum par un exemplaire type dû à l'obligeance de M. Cope."

=*Etheostoma* (*Ulocentra*) *simoterum* (Cope).

Ioa vigil Hay, 1882, Bull. U.S. Fish. Comm., vol. 2, p. 59.

Holotype: USNM 32201 (1, 23), Mississippi, Pearl R. at Jackson, O. P. Hay; July–August 1881.

=*Percina* sp. Perhaps *P.* (*Imostoma*) *uranidea* (Jordan and Gilbert). Not a species of *Ammocrypta* as has been presumed, but

a species of *Percina* with a well-developed ctenoid caducous scale between the bases of the pelvic fins.

Microperca proeliaris Hay, 1881, Proc. U.S. Nat. Mus., vol. 3, p. 496.

Holotype: USNM 27418 (1, 26), Mississippi, Alcorn Co., trib. of Tuscumbia R. at Corinth; O. P. Hay; March–April 1880; in poor condition.

=*Etheostoma* (*Microperca*) *proeliare* (Hay).

Microperca punctulata Putnam, 1863, Bull. Mus. Comp. Zool., vol. 1, p. 4.

Syntypes: USNM 1377 (♂, 22; ♀, 24), Illinois, Calumet R., near Chicago; R. Kennicott. MCZ 24566 (2 ♀, 23–24); orig. out of USNM 1377, then MCZ 95. USNM 1283 (20, 23–30), Wisconsin, Oconomowac R., Lac la Belle; S. F. Baird; July 1853. MCZ 24570 (9, 24–31) and UMMZ 86457 (3, 24–31), orig. out of USNM 1283, then MCZ 93. USNM 1288 (28, 15–30), Michigan, Port Huron; Baird; August 1853. MCZ 24690 (11, 16–28) and UMMZ 86316 (3, 19–28), orig. out of USNM 1288, then MCZ 94; in poor condition. MCZ 24582 (1, 19), Michigan, Detroit R.; Baird; August, 1853; orig. USNM 1294, then MCZ 96; in poor condition. Also USNM 1276 (1, ?), Wisconsin, tribs. of Fox R., Vienna; Baird; August 1853; which we have been unable to locate.

=*Etheostoma* (*Microperca*) *microperca* Jordan and Gilbert because *punctulata* is preoccupied in *Etheostoma* by *Poecilichthys punctulatus* Agassiz.

Nanostoma elegans Hay, 1881, Proc. U.S. Nat. Mus., vol. 3, p. 493.

Lectotype: USNM 27445 (♂, 43), Mississippi, Clarke Co., shallow rocky branch of Chickasawha R. at Enterprise; O. P. Hay; March–April 1880; listed as type by Jordan and Evermann (1896, p. 1075); selection herein confirmed. D X–12; A II, 8; LL 42; branchiostegals 5–5; INF 7; POM 9; cheeks, opercles, and nape scaly; breast naked.

Paralectotype: SU 627 (1, 53), same data as lectotype.

=*Etheostoma* (*Etheostoma*) *zonale lynceum* (Hay) because *elegans* is preoccupied in *Etheostoma* by *Boleichthys elegans* Girard.

Nanostoma vinctipes Jordan, 1880, Proc. U.S. Nat. Mus., vol. 2, p. 236.

Lectotype: USNM 23454 (1, 47), Illinois, trib. of Illinois R. at Naperville; E. R. Copeland; listed as type by Jordan and Evermann (1896, p. 1075); selection herein confirmed. D XI–10; A II, 6; LL 46; branchiostegals 6–6; INF 7; POM 10; cheeks, opercles, breast, and nape scaly.

Paralectotypes: The whereabouts of the other four specimens from the type series is unknown.

=*Etheostoma* (*Etheostoma*) *zonale vinctipes* (Jordan), a valid subspecies according to Dr. Chu-fa Tsai (pers. comm.).

Nothonotus inscriptus Jordan and Brayton, 1878, U.S. Nat. Mus., Bull. 12(A), p. 34.

Lectotype: USNM 31145 (♀, 43), Georgia, Hall Co., Oconee R. at Sulphur Springs; D. S. Jordan and A. W. Brayton; summer, 1877; herein selected. D X–10; A II,8; LL 49; prevomerine teeth present; 6 dorsal blotches; cheeks, opercles, prepectoral area, and breast naked; nape completely scaled.

Paralectotype?: USNM 197439 (♂, 42), apparently same data as lectotype.

We select USNM 31145 as lectotype for the following reasons. The original description was based on two syntypes, male and female. USNM 31145 has the proper data and is labeled type, so it is clearly part of the type series. The male that we believe is the other syntype was discovered in the USNM collection labeled USNM 31132, *Etheostoma*, Etowah R., Georgia, Jordan and Brayton. *N. inscriptum* was reported only from the type locality in the original description, so it seems probable that this locality is in error. Under the species column in the USNM catalog we found the following entry for USNM 31132: "*Notropis stilbius Semotilus*, etc. (*Etheostoma*)," and for the locality "Etowah R., Rome, Ga. (chiefly)." It is apparent that the data for the specimen of *inscriptus* under USNM 31132 are totally confused. Therefore, in order to avoid further confusion should other specimens be found bearing this number, we recataloged this specimen as USNM 197439 and designate USNM 31145 as lectotype, because it is the specimen that we are certain is part of the type material.

=*Etheostoma* (*Etheostoma*) *inscriptum* (Jordan and Brayton).

Nothonotus thalassinus Jordan and Brayton, 1878, U.S. Nat. Mus. Bull. 12(A), p. 13.

Lectotype: USNM 31122 (♂, 40), South Carolina, Saluda R., near Greenville; D. S. Jordan and A. W. Brayton; summer, 1877; listed as type by Jordan and Evermann (1896, p. 1072); selection herein confirmed. D XII–12; A II,8; pectoral rays 15–14; LL 44; INF 8; POM 10; prevomerine teeth present; cheeks, opercles, prepectoral area, and breast naked; anterior portion of belly naked; nape scaled; 7 dorsal blotches.

Paralectotypes: SU 987 (♀, 46; 5 ♂, 37–49), South Carolina, Saluda R. at Farr's Mills, W. of Greenville; Jordan and Brayton; summer, 1877. MCZ 24397 (♂, 44), South Carolina, Saluda R. BMNH 1880.1.21.68 (♂, 52), South Carolina, Saluda R., Jordan.

=*Etheostoma* (*Etheostoma*) *thalassinum* (Jordan and Brayton).

Oligocephalus grahami Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 102.

Holotype: MCZ 24576 (1, 33), Texas, Devil's R.; J. H. Clark under Col. J. D. Graham; orig. USNM 1182, then MCZ 85.

=*Etheostoma* (*Oligocephalus*) *grahami* (Girard).

Oligocephalus humeralis Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 67.

Lectotype: USNM 1203 (♂, 42), Virginia, James R.; S. F. Baird; 1850; herein selected. D VII–13; A II,8: LL 36+11=47; INF 4+2; POM 10; supratemporal canal interrupted; cheeks, opercles, nape, and breast naked; about 11 vertical bars on body; tips of dorsal spines enlarged and slightly forked; branchiostegal membranes moderately joined.

Paralectotypes: USNM 198001 (45, 23–49), removed from USNM 1203. MCZ 24634 (10, 25–54), orig. out of USNM 1203, then MCZ 16. MCZ 35975 (2, 22–33), orig. out of USNM 1203.

=*Etheostoma* (*Catonotus*) *flabellare flabellare* Rafinesque.

Oligocephalus leonensis Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 102.

Syntypes: MCZ 24580 (2 ♀, 34–37), Texas, Río Leona; J. H. Clark; badly dried; orig. USNM 748, then MCZ 83.

=?*Etheostoma* (*Oligocephalus*) *lepidum* (Baird and Girard). Although most characters suggest *E. lepidum*, there are well-developed ctenoid scales on the opercle, a character of *E. grahami* which is found in tributaries of the Rio Grande. The body appears to be more elongate than in either *E. lepidum* or *E. grahami*.

Oligocephalus pulchellus Girard, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 102.

Holotype: MCZ 32950 (1, 28), Oklahoma, trib. of Gypsum Cr., trib. of Canadian R.; Lt. A. W. Whipple and party, exploration of railroad route near 35th parallel; orig. USNM 1334.

=*Etheostoma* (*Oligocephalus*) *spectabile pulchellum* (Girard). See Hubbs and Ortenburger (1929).

Perca minima Haldeman, 1842, Journ. Acad. Nat. Sci. Philadelphia, vol. 8, p. 330.

Holotype: ANSP 13928 (1, about 47), Pennsylvania, Susquehanna R.; S. S. Haldeman; a skin preserved in alcohol and reported to be in poor condition by Fowler (1907).

=*Etheostoma* (*Boleosoma*) *olmstedi olmstedi* Storer. See Storer (1846, p. 271).

Perca (*Percina*) *nebulosa* Haldeman, 1842, Journ. Acad. Nat. Sci. Philadelphia, vol. 8, p. 330.

Holotype: ANSP 22652 (♂, 110), Pennsylvania, Susquehanna R., S. S. Haldeman; figured by Fowler (1945, fig. 202).
=*Percina* (*Percina*) *caprodes semifasciata* (DeKay).

Percina bimaculata Haldeman, 1844, Proc. Boston Soc. Nat. Hist., vol. 1, p. 157.

Types: USNM 1405, "*Percina*, Susquehanna River, S. S. Haldeman, *Percina* dried.—orig. of Haldeman" may be the type of *P. bimaculata*, but we have been unable to find this specimen.
=*Percina* (*Percina*) *caprodes semifasciata* (DeKay).

Percina caprodes burtoni Fowler, 1945, Acad. Nat. Sci. Philadelphia Monogr., no. 7, p. 134, figs. 218–219.

Holotype: ANSP 70701 (1, 134), North Carolina, Buncombe Co., Swannanoa R., near Oteen; E. M. Burton; Aug. 21, 1934.

Paratype: ANSP 13707 (1, 66), Virginia, Holston R.; E. D. Cope.
=*Percina* (*Percina*) *caprodes burtoni* (Fowler).

Percina (*Hadropterus*) *lenticula* Richards and Knapp, 1964, Copeia, no. 4, p. 695, fig. 1 A–C.

Holotype: CU 43592 (♂, 96), Alabama, Bibb Co., Cahaba R. on Ala. 27, 8.5 mi. N. of Centerville; R. D. and J. S. Suttkus; May 9, 1959.

Paratypes: CU 43593 (♀, 95), Alabama, Bibb Co., Cahaba R. on Ala. 5, 2.2 mi. N. of Centerville; Suttkus and party; July 8, 1958. TU 15291 (7 ♀, 77–92) and CU 43594 (♂, 86), same locality as CU 43593; Suttkus, R. J. and H. V. Miller, and J. de Abate; Mar. 17, 1957. UG 209 (3 ♂, 1 ♀, 48–63), CU 43435 (1 ♂, 1 ♀, 55–58), USNM 197491 (♂, 64), and UMMZ 180074 (♂, 60), Georgia, Cherokee Co., Etowah R. at the mouth of Canton Town Cr.; C. M. Tarzwell; Oct. 8, 1950.
=*Percina* (*Hadropterus*) *lenticula* Richards and Knapp.

Percina manitou Jordan, 1877, Proc. Acad. Nat. Sci. Philadelphia, vol. 29, p. 53.

Lectotype: USNM 23458 (♀, 68), Indiana, Fulton Co., Lake Manitou; D. S. Jordan; labeled "drawn"; herein selected. D XV–14; A II,11; LL 86; breast and nape naked; cheeks and opercles scaled; one enlarged ctenoid scale on midline of anterior part of belly.

Paralectotypes: The original description was based on three specimens in the Indiana State collections. One of these possessed and the other two lacked "enlarged, mucronate plates." We have not been able to locate the other two syntypes (one male and one female) and therefore designate the syntype we have found as lectotype.
=*Percina* (*Percina*) *caprodes semifasciata* (DeKay).

Percina nigrofasciata raneyi Crawford, 1956, Tulane Stud. Zool., vol. 4, no. 1, p. 49, fig. 10.

Holotype: CU 23344 (♂, 79), South Carolina, Abbeville Co., Calhoun Cr., trib. of Savannah R., 7.6 mi. E. of Calhoun Falls on rt. 72; E. C. Raney, R. W. Crawford, R. H. Backus, C. R. Robins, J. N. Layne, and R. L. Wigley; Mar. 27, 1951.

Paratypes: CU 19599 (37, 43–78) and USNM 188896 (2♂, 75–78; 2♀, 61–63), same data as holotype.

=*Percina* (*Hadropterus*) *nigrofasciata raneyi* Crawford.

Percina (*Alvordius*) *notogramma montuosa* Hogarth and Woolcott, 1966, Chesapeake Sci., vol. 7, no. 2, p. 101, fig. 2.

Holotype: USNM 199556 (♂, 51), Virginia, Campbell Co., Beaver Cr. 4 mi. E. of Lynchburg on US 460; W. T. Hogarth and E. Collins; Oct. 20, 1964.

Paratypes (all from Virginia): UR 2337 (3, 40–57), Albemarle Co., Hog Cr., at jct. with Rockfish R. at jct. of Co. rt. 602 and 722; Hogarth, C. Beirne, L. Kiss; Apr. 15, 1965. UMMZ 144697 (3, 47–49), Rockbridge Co., North R.; L. C. Pettit; May 17, 1941. UMMZ 175103 (5, 52–62), Alleghany Co., Potts Cr. above jct. with Jackson R.; C. R. Gilbert and D. G. Myer; Sept. 13, 1957. UR 2294 (6, 34–59), Albemarle Co., jct. with Rock Castle Cr. and Totier Cr. 1.2 mi. S. Scottsville on Co. rt. 726; W. S. Woolcott and Hogarth; Apr. 1, 1965. VPI 1006 (2, 51–64), Craig Co., Craig Cr. 6.8 mi. from New Castle on rt. 311; R. D. Ross, Wakeman, Cook; Aug. 19, 1958. CU 47322 (1, 48), Craig Co., Craig Cr. 0.25 river mi. downstream from Pinetop; R. E. Jenkins, J. E. Carico, R. L. Miles; June 6, 1963. VPI 1014 (1, 68), Rockbridge Co., South R. 4.9 air mi. E. of Lexington; Ross, Wakeman, Cook, Carroll, Handley; Aug. 21, 1958. VPI 981 (1, 52), Bath Co., Jackson R. 1.5 mi. N. of Greenwood; Ross, Wakeman, Cook; July 15, 1958. CU 47321 (2, 56–63), Bath Co., Jackson R., Hidden Valley Farm 4.3 mi. N. Mitchell Town; Ross, Jenkins; July 20, 1963. VPI 954 (2, 64–67), Bath Co., Cow Pasture R., 0.4 mi. NE. Nimrod Hall; Ross, Wakeman, Cook; July 3, 1958. UR 2350 (1, 52), Nelson Co., Owens Cr. 2.3 mi. SE. Buffalo Springs on Co. rt. 626; Hogarth, Beirne, Kiss; Apr. 15, 1965. UR 1797 (3, 53–62), Craig Co., John's Cr., Co. rt. 632, 2 mi. NE. jct. Co. rt. 632 and 658; Woolcott and Ichthyology Class; June 27, 1963. UR 2321 (12, 33–58), Amherst Co., Partridge Cr., Co. rt. 622 at jct. Co. rt. 624 near Stapleton; Hogarth, Beirne, Kiss; Apr. 15, 1965. VPI 963 (1, 47), Bath Co., Jackson Cr. 8.5 mi. S. Bacova on Co. rt. 603; Ross, Wakeman, Cook; July 2, 1958. VPI 1005 (1, 55), Craig Co., Craig Cr., 3 mi. SE. New Castle; Ross, Wakeman, Cook; Aug. 19, 1958. USNM 199557 (3, 44–62), Campbell Co., Beaver Cr. 4 mi. E. Lynchburg on U.S. 460; Hogarth and E. J. Collins; Oct. 20, 1964. UMMZ 175121 (1, 51), Alleghany Co., Potts Cr.; Gilbert and Myer; Sept. 13,

1957. UMMZ 95194 (1, 41), Alleghany Co., Dunlap Cr.; C. L. and L. C. Hubbs; Sept. 10, 1928.

=*Percina* (*Alvordius*) *notogramma montuosa* Hogarth and Woolcott.

Pileoma carbonaria Baird and Girard, 1853, Proc. Acad. Nat. Sci. Philadelphia, vol. 6, p. 387.

Lectotype: USNM 740 (♂, 85), Texas, Río Salado, 4 mi. from San Antonio; J. H. Clark; herein selected. D XV–15; A II, 11; LL 90; breast naked; cheeks, opercles, and nape completely covered with scales.

Paralectotypes: USNM 197999 (2 ♂, 75–87; ♀, 73), removed from USNM 740. MCZ 24599 (2 ♂, 88–108) and UMMZ 86594 (♂, 86), orig. out of USNM 740, then MCZ 269.

Jordan and Evermann (1896, p. 1027) also listed USNM 742 as "type." This specimen was taken by Kennerly in San Pedro Creek; there is no mention of either this locality or collector in the original description, so the specimen is not part of the type series.

= *Percina* (*Percina*) *caprodes carbonaria* (Baird and Girard).

Pileoma cymatogramma Abbott, 1860, Proc. Acad. Nat. Sci. Philadelphia, vol. 12, p. 327.

Holotype: ANSP 14009 (♀, 45), no locality.

= *Etheostoma* (*Etheostoma*) *blennioides blennioides* Rafinesque. See Miller (1964).

Pileoma semifasciatum DeKay, 1842, Nat. Hist. New York Zool., vol. 1, pt. 4, p. 16, pl. 50, fig. 162.

Syntypes: ?New York, Westport on Lake Champlain; J. E. DeKay; figure based on material then in the N.Y. State collection. Dr. E. M. Reilly, Curator of Zoology, has informed us that the types of this species are no longer present in the New York State Museum.

Topotypes are available: MCZ 24613 (5, 41–77), S. F. Baird.

= *Percina* (*Percina*) *caprodes semifasciata* (DeKay).

Pileoma zebra Agassiz, 1850, Lake Superior, p. 308, pl. 4, fig. 4.

Syntypes: MCZ 24636 (♂, 51; ♀, 60), Ontario, Lake Superior, "The Pic" at the mouth of the Pic R.; L. Agassiz; about July 13, 1848; orig. USNM 1175, then MCZ 257. UMMZ 86592 (1, 53) out of MCZ 24636.

= *Percina* (*Percina*) *caprodes semifasciata* (DeKay). See Hubbs and Brown (1929, p. 47).

Plesioperca anceps Vaillant, 1873, Nouv. Arch. Mus. Hist. Nat. Paris, vol. 9, p. 37, pl. 1, fig. 3.

Holotype: MNHN 2778 (♂, 86), locality unknown; donated by Agassiz; orig. MCZ 851.

= *Percina* (*Hadropterus*) *nigrofasciata nigrofasciata* (Agassiz).

See Jordan (1880, p. 225) and Crawford (1956).

Pleurolepis asprellus Jordan, 1878, Bull. Illinois State Lab. Nat. Hist., vol. 1, no. 2, p. 38.

Holotype: INHS uncat. (1, 90), Illinois, Hancock Co., small rocky trib. of Mississippi R.; C. K. Worthen.

Paratypes: ?(1, ?), same data as holotype. ? Illinois, Effingham Co., Little Wabash R.; S. A. Forbes; July 1877. We have been unable to find any paratypes of this species. The types were originally in the collection of the Illinois State Laboratory of Natural History. Smith and Bridges (1960, p. 254) did not list any type material of this species in the collections of the Illinois Natural History Survey which is the State Laboratory's successor, but Dr. Smith recently found the holotype for us.

= *Ammocrypta* (*Crystallaria*) *asprella* (Jordan).

Pleurolepis pellucidus Agassiz *in* Putnam, 1863, Bull. Mus. Comp. Zool., vol. 1, p. 5.

Lectotype: USNM 1311 (1, 50), Ohio, Black R., below falls at Elyria; S. F. Baird; August 1853; orig. no. 17. USNM 1311, then containing 21 specimens, was listed as type by Jordan and Evermann (1896, p. 1063); Linder (1959, p. 182) selected 1 specimen as lectotype.

Paralectotypes: USNM 164165 (20, 40–48) removed from USNM 1311 by Linder (1959). MCZ 24616 (9, 30–47) and UMMZ 86489 (3, 47–50) orig. out of USNM 1311, then MCZ 270. Although not mentioned by Jordan and Evermann or Linder, these collections are obviously part of the original material and come from the type locality and so must be considered parlectotypes.

There is no mention of any localities in the original description of *P. pellucidus*, but the following specimens were probably part of the original material. USNM 1289 (1, 49), Michigan, Port Huron; Baird; August 1853. USNM 1295 (1, 39), Mich., Detroit R.; Baird; August 1853. MCZ 24626 (4, 44–49) and UMMZ 86479 (1, 46), Ohio, Rockport; Kirtland.

=*Ammocrypta* (*Ammocrypta*) *pellucida* (Agassiz) not *A. pellucida* (Baird) as frequently given because the Baird name was listed as a synonym in Putnam and therefore has no status.

Poecilichthys artesiae Hay, 1881, Proc. U.S. Nat. Mus., vol. 3, p. 494.

Holotype: USNM 27434 (♂, 63), Mississippi, Lowndes Co., Catawba Cr., trib. of Tombigbee R. at Artesia; O. P. Hay; March–April 1880.

=*Etheostoma* (*Oligocephalus*) *whipplii artesiae* (Hay). See Hubbs and Black (1941).

Poecilichthys asprigenis Forbes *in* Jordan, 1878, Bull. Illinois State Lab. Nat. Hist., vol. 1 no. 2, p. 41.

Syntypes: SU 2201 (2, 38–39), Illinois, small creek near Pekin. The original description was based on 14 specimens from the type locality, but we have been unable to locate the other 12. Smith and Bridges (1960) did not report any type specimens of this species in the collections of the Illinois Natural History Survey which inherited the material of the Illinois State Laboratory.

MCZ 25051 (1, 45), Illinois, Peoria, 1880, is labeled as cotype but was collected after the original description was published and came from Peoria rather than from Pekin.

=*Etheostoma* (*Oligocephalus*) *asprigene* (Forbes).

Poecilichthys beani Jordan, 1884, Proc. U.S. Nat. Mus., vol. 7, p. 479.

Holotype: USNM 35754 (♀, 36), Missouri, Lafayette Co., Tabo Cr., trib. of Missouri R., near Lexington.

=*Etheostoma* (*Boleosoma*) *nigrum nigrum* Rafinesque. Jordan (1885, p. 548) admitted *P. beani* was a mutilated individual of *Boleosoma maculatum* (=*E. nigrum*).

Poecilichthys borealis Jordan, 1884, Proc. U.S. Nat. Mus., vol. 7, p. 477.

Lectotype: USNM 35747 (♂, 41), Canada, Montreal; T. J. Doran; herein selected. D IX–11; A II,7; LL 20+34=54; INF 8; POM 10; supratemporal canal widely interrupted; cheeks, opercles, nape, and belly covered with scales; few scattered scales on breast and prepectoral region.

Paralectotypes: USNM 197993 (3, 35–48), removed from USNM 35747. The fifth syntype mentioned in the original description is in SU 5447 but unfortunately became mixed with two specimens from Gravenhurst, Canada (SU 6261) during the earthquake.

=*Etheostoma* (*Oligocephalus*) *exile* (Girard). See Hubbs (1926, p. 67) and Richardson (1938).

Poecilichthys butlerianus Hay, 1883, Bull. U.S. Fish Comm., vol. 2, p. 61.

Holotype: USNM 32224 (1, 43), Mississippi, Yazoo Co., Big Black R., near Vaughn's Station; O. P. Hay; Aug. 20, 1881.

=*Etheostoma* (*Hololepis*) *gracile* (Girard). See Hubbs and Cannon (1935) and Collette (1962).

Poecilichthys camurus Cope, 1870, Proc. Amer. Philos. Soc., vol. 11, p. 265.

Lectotype: ANSP 13741 (1, 55), Tennesee, headwaters of Cumberland R.; herein selected by Dr. Edward C. Raney. D X–13; A II,9; LL 58.

Paralectotypes: ANSP 13742–44 (3, 49–56), same data as lectotype.

The types were found mixed in with the types of *Poecilichthys sanguifluus* Cope by Dr. Edward C. Raney.

=*Etheostoma* (*Nothonotus*) *camurum* (Cope). See Bailey (1959).

Poecilichthys coosae Fowler, 1945, Acad. Nat. Sci. Philadelphia, Monogr., no. 7, p. 356, figs. 226–228.

Holotype: ANSP 71189 (1, 38), Alabama, Cherokee Co., small cr., ¼ mi. NE. of Chesterfield, Coosa R. drainage; G. A. Coventry and C. B. Peterson; July 7, 1942.

Paratypes: All collected by Coventry and Peterson in Cherokee Co., Ala. ANSP 71190–91 (2, 34–35), same data as holotype. ANSP 71192–95 (4, 32–50), Cowan's Cr., Jordan's store; July 3, 1942. ANSP 71196 (♀, 39), cave on Lookout Mt., "Split Rock" at Little R. Gulch; July 1, 1942.

=*Etheostoma (Ulocentra) coosae* (Fowler).

Poecilichthys euzonus erizonus Hubbs and Black, 1940, Occ. Pap. Mus. Zool. Univ. Michigan, no. 416, p. 17, pl. 1, fig. 2.

Holotype: UMMZ 124597 (♂, 66), Missouri, Ripley Co., Current R. at "The Nook," T. 23 N., R. 2 E., sec. 9; A. H. Denney; Aug. 10, 1938.

Paratypes: UMMZ 124598 (5, 44–57), same data as holotype. UMMZ 124595 (8, 60–70), Missouri, Carter Co., Carter County Hunting and Fishing Club, T. 26 N., R. 1 E., sec. 11 and 12; Denney; July 25, 1938. UMMZ 124596 (2, 36–62), Missouri, Ripley Co., Doniphan Boat Landing, T. 23 N., R. 2 E., sec. 27; Denney; July 26, 1938. UMMZ 124599 (2, 58), Missouri, Carter Co., Current R., just above mouth of Pike Cr., T. 27 N., R. 1 W., sec. 23; Denney; Aug. 18, 1938.

=*Etheostoma* (*Etheostoma*) *euzonum erizonum* (Hubbs and Black.)

Poecilichthys euzonus euzonus Hubbs and Black, 1940, Occ. Pap. Mus. Zool. Univ. Michigan, no. 416, p. 23, pl. 1, fig. 3.

Holotype: UMMZ 123548 (♂, 61), Arkansas, Searcy Co., Buffalo R., 4 mi. SE. of St. Joe; J. D. and R. Y. Black; July 8, 1938.

Paratypes: UMMZ 124594 (4, 28–51), and USNM 117587 (1, 35), same data as holotype. UMMZ 123391 (2, 42–43), Arkansas, Madison Co., King's R., 3 mi. E. of Alabam at Denney Cave; J. D. and R. Y. Black; June 30, 1938. UMMZ 123504 (1, 45), Arkansas, Carroll Co., White R. near Busch; J. D. and R. Y. Black; July 8, 1938.

=*Etheostoma* (*Etheostoma*) *euzonum euzonum* (Hubbs and Black).

Poecilichthys gutselli Hildebrand, 1932, Journ. Elisha Mitchell Sci. Soc., vol. 48, no. 1, p. 78, pl. 3.

Holotype: USNM 92402 (♂, 71), North Carolina, Swain Co., Tuckaseegee R. at Ela; J. S. Gutsell; Aug. 26, 1930.

Paratypes: USNM 197411 (♀, 75), same data as holotype. USNM 92580 (♀, 37), North Carolina, Jackson Co., Tuckaseegee R., below Cullowhee; Gutsell; Aug. 29, 1930.

=*Etheostoma* (*Etheostoma*) *blennioides gutselli* (Hildebrand). See Miller (1964).

Poecilichthys hopkinsi Fowler, 1945, Acad. Nat. Sci. Philadelphia Monogr., no. 7, p. 249, fig. 206.

Holotype: ANSP 71548 (♀, 44), Georgia, Wilcox Co., Osewitchee Springs, 14 mi. N. of Fitzgerald; M. N. Hopkins, Jr.; Aug. 15, 1942.

Paratypes: ANSP 71567–69 (3, 25–45), same locality and collector as holotype; June 29, 1944.

=*Etheostoma* (*Oligocephalus*) *hopkinsi hopkinsi* (Fowler). See Bailey and Richards (1963).

Poecilichthys jessiae Jordan and Brayton *in* Jordan, 1878, Manual Vertebrates, 2nd ed., p. 227, and *in* Jordan and Brayton, 1878, U.S. Nat. Mus. Bull. 12(A), p. 59.

Syntypes: ? "sev. spec. each about 2″ long," Georgia, Chickamauga R. at Ringgold; D. S. Jordan and A. W. Brayton; summer, 1877. We have been unable to find any of the type material of this species. Figure 4 was found in the files of the Division of Fishes labeled as "*Poecilichthys jessiae*, Chickamauga River, Ga." We feel that it is probably based on one of the types and so reproduce it here.

=*Etheostoma* (*Boleosoma*) *jessiae* (Jordan and Brayton).

Poecilichthys kanawhae Raney, 1941, Occ. Pap. Mus. Zool. Univ. Michigan, no. 434, pl. 1.

Holotype: UMMZ 131837 (♂, 72), North Carolina, Ashe Co., N. Fork of New R. on rt. 16 at Crumpler; E. C. Raney, E. A. Lachner, and L. J. Kezer; Apr. 1, 1940.

Paratypes: UMMZ 131838 (7, 39–60) and CU 7663 (13, 39–57), same data as holotype. CU 7678 (2♂, 48–53), North Carolina, Ashe Co., N. Fork of New R., 1 mi. NNE. of Warrensville; Raney, Lachner, Kezer; Apr. 1, 1940. CU 7830 (3, 42–69) and UMMZ 131834 (2, 35), North Carolina, Ashe Co., N. Fork of New R., 1 mi. NNE. of Creston; Raney, Lachner, Kezer; Apr. 2, 1940. CU 7688 (5, 44–59) and UMMZ 131836 (2, 50–56), North Carolina, Ashe Co., S. Fork of New R. on rt. 16 at Index; Raney, Lachner, Kezer; Apr. 2, 1940. CU 7693 (3, 40–44) and UMMZ 131835 (2, 40–42), North Carolina, Ashe Co., S. Fork of New R., 1 mi. SW. of Fleetwood; Raney, Lachner, Kezer; Apr. 2, 1940. UMMZ 95371 (2, 30–44), Virginia, Carroll Co., Big Reed Island Cr.; C. L. Hubbs and E. P. Creaser; May 17, 1931. USNM 107679 (3, 46–59), Virginia, Carroll

Co., Crooked Cr., 4 mi. E. of Galax; L. P. Schultz and E. D. Reid; July 13, 1938.

=*Etheostoma* (*Etheostoma*) *kanawhae* (Raney).

Poecilichthys mesaeus Cope, 1864, Proc. Acad. Nat. Sci. Philadelphia, vol. 16, p. 232.

Lectotype: ANSP 13943 (♀, 49), Nebraska, Platte R., near Ft. Kearney; W. Hammond; selected and illustrated by Fowler (1907, p. 524, fig. 7).

Paralectotypes: ANSP 13944–46 (3), same data as lectotype. Fowler wrote "Type, No. 13,943, A.N.S.P." and did not mention these three specimens.

=*Etheostoma* (*Boleosoma*) *nigrum nigrum* Rafinesque.

Poecilichthys osburni Hubbs and Trautman, 1932, Ohio Journ. Sci., vol. 32, no. 1, p. 34, fig. 2.

Holotype: UMMZ 92409 (♂, 75), West Virginia, Pocohontas Co., Stony Cr., trib. of Greenbrier R.; J. Addair; June 2, 1931.

FIGURE 4.—*Poecilichthys jessiae* Jordan and Brayton, Chickamauga River, Ga. (previously unpublished drawing by Ernest Copeland that probably represents one of the lost syntypes).

Paratypes: UMMZ 92410 (5, 58–85), and OSM 12946 (4, 56–81), same data as holotype. USNM 39542 (♀, 56), Virginia, South Fork Reed's Cr.; M. McDonald. UMMZ 95370 (7, 49–57), and USNM 117588 (♀, 64), Virginia, Wythe Co., Reed Cr., trib. of New R., 2–3 mi. below Max Meadows; C. L. Hubbs and E. P. Creaser; May 17, 1931.

=*Etheostoma* (*Etheostoma*) *osburni* (Hubbs and Trautman). See Raney (1941).

Poecilichthys palustris Gilbert, 1884, Proc. U.S. Nat. Mus., vol. 7, p. 209.

Lectotype: USNM 34983 (♂, 30), Indiana, Greene Co., Switz City Swamp; C. H. Gilbert; August 1883; selected by Hubbs and Cannon (1935, p. 44).

Paralectotype: Gilbert mentioned a second specimen in his original description which has apparently been lost (Hubbs and Cannon, 1935, p. 44).

=*Etheostoma* (*Hololepis*) *gracile* (Girard). See Hubbs and Cannon (1935) and Collette (1962).

Poecilichthys punctulatus Agassiz, 1854, Amer. Journ. Sci. and Arts, vol. 17, p. 304.

Lectotype: MCZ 39 (1, 52), Missouri, Osage R.; G. Stolley; herein selected. D XII–14; A II, 8; LL 59+13=72; INF 8; POM 10; supratemporal canal widely incomplete; cheeks and opercles naked; color pattern completely faded.

Paralectotype: MCZ 43091 (1, 48), removed from MCZ 39.

=*Etheostoma* (*Oligocephalus*) *punctulatum* (Agassiz).

Poecilichthys quiescens Jordan, 1884, Proc. U.S. Nat. Mus., vol. 7, p. 478.

Holotype: USNM 28509 (♂, 36), Georgia, trib. of Altamaha R. [error for Alapaha R.], a branch of the Suwanee R. at Nashville; W. J. Taylor.

=*Etheostoma* (*Hololepis*) *fusiforme barratti* (Holbrook). See Hubbs and Cannon (1935) and Collette (1962).

Poecilichthys radiosus cyanorum Moore and Rigney, 1952, Copeia, no. 1, p. 10, pl. 1, figs. 3–4.

Holotype: UMMZ 161366 (♂, 68), Oklahoma, Johnston Co., Blue R., trib. of Red R., on U.S. 99, T. 1 S., R. 6 E.; G. A. Moore; Apr. 4, 1949; orig. OAM 2914.

Paratypes: All from the Blue R., Oklahoma, collected by G. A. Moore and students. OAM 2913 (96, 27–67), same data as holotype. UMMZ 161367 (77, 32–70), same locality; Apr. 5, 1947. MCZ 37204 (11, 33–53), Blue R., 10 mi. W. of Wapanucka, 3 mi. S. of rt. 7; Apr. 6, 1947; orig. OAM 1497. UOMZ 26154 (82, 28–53), Little Blue R., T. 1 N., R. 6 E., NW. sec. 36; Apr. 5, 1947. UOMZ 26155 (15, 39–49), Bryan Co., Cedar Cr., 7 mi. E. and 1 mi. S. of Durant; Apr. 15, 1949. USNM 153532 (49, 38–54), Pontotoc Co., Blue R., near source, SW. of Ada; orig. OAM 1587.

=*Etheostoma* (*Oligocephalus*) *radiosum cyanorum* (Moore and Rigney).

Poecilichthys radiosus paludosus Moore and Rigney, 1952, Copeia, no. 1, p. 11, pl. 2, figs. 3–4.

219–948—66——5

Holotype: UMMZ 161368 (♂, 47), Oklahoma, Pontotoc Co., Bois d'Arc Cr., trib. of Clear Boggy Cr., T. 2 N., R. 6 E.; E. Leonard, J. Stevenson, M. Chapman; Apr. 16, 1949; orig. OAM 2933.

Paratypes: All from Oklahoma. UMMZ 161369 (58, 30–45), same data as holotype. MCZ 37205 (41, 36–60), Pontotoc Co., Clear Boggy Cr.; Moore; Apr. 16, 1947; orig. OAM 1625. UOMZ 26156 (19, 28–39), Pontotoc Co., Jack Fork, Clear Boggy system, T. 2 N., R. 6 E.; J. M. McDowell, P. White, R. Loomis; Apr. 16, 1949. OAM 1703 (2, 36–41), Kiamichi R., S. of Talahina; Moore et al.; June 7, 1947. USNM 153533 (38, 27–39), Pushmataha Co., small trib., T. 2 N., R. 21 E., sec. 17; A. P. Blair and J. T. Herbelin; Apr. 16, 1949. UOMZ 26157 (36, 26–35), Latimer Co., Buffalo Cr., 21 mi. S. of Wilburton, T. 3 N., R. 19 E.; Blair and Herbelin; Apr. 17, 1949. USNM 198109 (27, 30–39), Pushmataha Co., Kiamichi R., SE. of Clayton, T. 1 N., R. 19 E., sec. 7; Blair and Herbelin; Apr. 16, 1949; orig. TUC uncat.

=*Etheostoma* (*Oligocephalus*) *radiosum paludosum* (Moore and Rigney).

Poecilichthys rufilineatus Cope, 1870, Proc. Amer. Philos. Soc., vol. 11, p. 267.

Lectotype: ANSP 13791 (1) North Carolina, Madison Co., Warm Springs Cr., trib. of French Broad R.; E. D. Cope. Selected and illustrated by Fowler (1907, p. 525, fig. 9). Still mixed with paralectotypes, a total of seven specimens (42–58).

Paralectotypes: ANSP 13792–97 (6), same data as holotype.

=*Etheostoma* (*Nothonotus*) *rufilineatum* (Cope). See Bailey (1959).

Poecilichthys sagitta Jordan and Swain, 1883, Proc. U.S. Nat. Mus. vol. 6, p. 250.

Holotype: ? (1, 2½ in. TL), Kentucky, Whitley Co., Wolf Cr., trib. of Clear Fork of Cumberland R., near Pleasant View; D. S. Jordan, J. Swain, et al.; May 1883. According to the original description, the type should be in the USNM collection, but we have been unable to find it here or elsewhere.

=*Etheostoma* (*Oligocephalus*) *sagitta sagitta* (Jordan and Swain). See Bailey (1948) and Kuehne and Bailey (1961).

Poecilichthys sanguifluus Cope, 1870, Proc. Amer. Philos. Soc., vol. 11, p. 264.

Lectotype: ANSP 13738 (1, 55), Tennessee, headwaters of South Fork of Cumberland R.; E. D. Cope; herein selected by Dr. Edward C. Raney.

Paralectotypes: ANSP 13739–40 (2, 48–50), same data as lectotype. Fowler (1907, p. 524) referred to seven syntypes of *P. sanguifluus*,

ANSP 13738 (type) to 13744. Three are types of *Poecilichthys camurus* Cope (q.v.).

=*Etheostoma* (*Nothonotus*) *maculatum sanguifluum* (Cope) according to Raney and Zorach (MS).

Poecilichthys saxatilis Hay, 1881, Proc. U.S. Nat. Mus. vol. 3, p. 495.

Holotype: USNM 27433 (1, 31), Mississippi, Clarke Co., trib. of Chickasawha R. at Enterprise; O. P. Hay; March-April 1880.

=*Etheostoma* (*Boleosoma*) *stigmaeum* (Jordan). See Bailey, Winn, and Smith (1954, p. 142).

Poecilichthys spectabilis Agassiz, 1854, Amer. Journ. Sci. and Arts, vol. 17, p. 304.

Lectotype: UMMZ 86340 (♂, 48), Missouri, Osage R., G. Stolley; out of MCZ 24503+24529+24722; herein selected by Mr. Donald A. Distler. D XI–13; A II, 6; LL 27+19=46; INF 4+3; pectoral rays 11; supratemporal canal complete.

Paralectotypes: UMMZ 179528 (6, 27–35), same data as lectotype; 1 specimen of *E. caeruleum* removed by Distler and recataloged as UMMZ 179529. MCZ 24503+24529+24722 (21, 27–40); 15 of the specimens in poor condition from drying; 3 specimens of *E. caeruleum* removed and recataloged as MCZ 42077. USNM 120284 (5, 32–48), out of MCZ 24503, 1 specimen of *E. caeruleum* removed and recataloged as USNM 196738.

=*Etheostoma* (*Oligocephalus*) *spectabile spectabile* (Agassiz). See Trautman (1930).

Poecilichthys swaini Jordan, 1884, Proc. U.S. Nat. Mus., vol. 7, p. 479.

Holotype: USNM 35308 (♂, 41), Mississippi, Lawrence Co., trib. of Pearl R. at Monticello.

=*Etheostoma* (*Oligocephalus*) *swaini* (Jordan).

Poecilichthys tetrazonus Hubbs and Black, 1940, Occ. Pap. Mus. Zool. Univ. Michigan, no. 416, p. 11, pl. 1, fig. 1.

Holotype: UMMZ 111330 (1, 33), Missouri, Dallas Co., Big Niangua R. at mouth of Greasy Cr., 6 mi. SE. of Buffalo; J. C. Salyer; Aug. 28, 1931.

Paratype: UMMZ 124600 (1, 22), same data as holotype.

=*Etheostoma* (*Etheostoma*) *tetrazonum* (Hubbs and Black).

Poecilichthys versicolor Agassiz, 1854, Amer. Journ. Sci. and Arts, vol. 17, p. 304.

Lectotype: USNM 1822 (♂, 42), Illinois, small creeks near Quincy; L. Watson; herein selected. D IX–14; A II, 7; LL 28+19=47; INF 4+3; POM 10; supratemporal canal complete.

Paralectotypes: USNM 197493 (5, 34–40), removed from USNM 1822; 1 specimen that is apparently an aberrant *spectabile* recataloged as USNM 197443.

USNM 1816, Missouri, Osage R.; G. Stolley is listed in the USNM catalog as type material, but these specimens have apparently been mixed with the paralectotypes of *Poecilichthys spectabilis* Agassiz in MCZ 24722.

=*Etheostoma* (*Oligocephalus*) *spectabile spectabile* (Agassiz).

Poecilichthys virgatus Jordan, 1880, Proc. U.S. Nat. Mus., vol. 2, p. 236.

Lectotype: USNM 23456 (1, 39), Kentucky, Rock Castle R. at Livingston; D. S. Jordan; selected by Jordan and Evermann (1896, p. 1093).

Paralectotypes: Of the "numerous typical examples" mentioned in the original description, we have been able to locate only one specimen other than the holotype. UMMZ 187511 (1, 41), same data, orig. IU 451, then IU 4748. A specimen was supposed to have been sent to the British Museum, but Collette could find no record of this having been done and could not find such a specimen in their collection in October 1963.

=*Etheostoma* (*Catonotus*) *virgatum* (Jordan).

Poecilichthys vitreus Cope, 1870, Proc. Amer. Philos. Soc., vol. 11, p. 263.

Holotype: ?, North Carolina, Wake Co., Walnut Cr., trib. of Neuse R.; E. D. Cope; late November. Types of other species described by Cope in the 1870 paper were deposited at ANSP, but Fowler (1907) did not mention the type (a female) of this species, and we have been unable to find it in several thorough searches.

=*Etheostoma* (*Ioa*) *vitreum* (Cope).

Poecilichthys vulneratus Cope, 1870, Proc. Amer. Philos. Soc., vol. 11, p. 266.

Holotype: ANSP 13798 (♂, 44), North Carolina, Madison Co., Warm Springs Cr., trib. of French Broad R. Found in bottle containing the types of *Poecilichthys rufilineatus* Cope by Dr. Edward C. Raney.

=*Etheostoma* (*Nothonotus*) *maculatum vulneratum* (Cope), according to Raney and Zorach (MS).

Poecilichthys whipplii montanus Hubbs and Black, 1941, Occ. Pap. Mus. Zool. Univ. Michigan, no. 429, p. 15, pl. 1, fig. 2.

Holotype: UMMZ 127777 (♂, 75), Arkansas, Washington Co., near head of Blue Hole Cr., trib. of Clear Cr., 1 mi. S. of Winslow; J. D. Black and J. Yerton; June 17, 1939.

Paratypes: USMM 117589 (7, 17–56), same locality as holotype; J. D. and R. Y. Black; Aug. 3, 1938; orig. UMMZ 123802. The remainder of the paratypes are all UMMZ specimens from Arkansas. 128678 (2, 24–48), Crawford Co., Schaberg Cr., trib. of Frog Bayou; Black, Mills, and Yerton; Aug. 17, 1939. 123806 (100, 16–72), Washington Co., Blue Hole Cr., Blue Hole, T. 13 N., R. 30 W.; Black and Yerton; Aug. 3, 1938. 123813 (107, 17–54), Washington Co., Railroad Cr., trib. of Frog Bayou, 1.5 mi. S. of Winslow; Black and Yerton; Aug. 4, 1938. 123821 (53, 17–64), Washington Co., Railroad Cr., below Cliff Hole, trib. of Frog Bayou, T. 13 N., R. 30 W.; Black and Yerton; Aug. 4, 1938. 123352 (1, 33), Crawford Co., Jones Cr., 1 mi. W. of Wintrey, T. 12 N., R. 29 W.; Black and Yerton; June 29, 1938. 123842 (2, 41), Crawford Co., Schaberg Cr., trib. of Frog Bayou, near Schaberg, T. 12 N., R. 30 W.; Black and party; Aug. 5, 1938. 127778 (7, 27–63), Washington Co., Blue Hole Cr., 1 mi. S. of Winslow; Black and Yerton; June 17, 1939. 123802 (220, 14–69), Washington Co., Blue Hole Cr., 1.5 mi. S. of Winslow, T. 13 N., R. 30 W.; Black and Yerton; Aug. 3, 1938.

=*Etheostoma* (*Oligocephalus*) *whipplii montanum* (Hubbs and Black).

Poecilichthys whipplii radiosus Hubbs and Black, 1941, Occ. Pap. Mus. Zool. Univ. Michigan, no. 429, p. 10, pl. 1, fig. 1.

Holotype: UMMZ 123080 (♂, 50), Arkansas, Hot Spring Co., Sugar Loaf Cr., trib. of Caddo R., Ouachita R. system; J. D. and R. Y. Black; June 19, 1938.

Paratypes: USNM 36419 (5, 22–30), Arkansas, Ouachita R. at Arkadelphia; D. S. Jordan and C. H. Gilbert. USNM 36442 (19, 22–46), Arkansas, Saline R. at Benton; Jordan and Gilbert. USNM 42766 (1, 27), Arkansas, Hot Springs; Meek.

The following paratypes are all UMMZ specimens from Oklahoma: 73056 (1, 45), Kiamichi R., 4 mi. E. of Tuskahoma. 81136 (1, 42), Le Flore Co., 8 mi. W. of Arkansas line; June 18, 1927. 109033 (2, 21–25), Pushmataha Co., Ten Mile Cr., trib. of Kiamichi R., 4 mi. NW. of Miller; June 26, 1929. 109036 (1, 47), Atoka Co., Little Boggy Cr., 5 mi. NE. of Atoka; June 28, 1928. 109448 (2, 45), Pushmataha Co., Walnut Cr., trib. of Kiamichi R., 1 mi. SW. of Albion; June 19, 1931. 110863 (3, 33–46), Le Flore Co., trib. of Big Cedar Cr., near NW. end of Rich Mt.; June 26, 1934. 129696 (1, 34), McCurtain Co., Glover R., one-fourth mi. W. of Glover; W. F. and P. F. Blair; June 16, 1938. 105393 (1, 27), Big Hell Cr., trib. of Ouachita R. at Mimoca, 7 mi. N. of Norman; Holloway; Mar. 25, 1937.

The following paratypes are all UMMZ specimens from Arkansas: 123067 (1, 21), Garland Co., Lake Hamilton, T. 3 S., R. 20 W.;

C. E. Burt; July 6, 1931. 123193 (3, 29–40), Hempstead Co., trib. of Terre Rouge Cr., 5.5 mi. NE. of Hope on U.S. 67; J. D. and R. Y. Black; June 22, 1938. 123230 (3, 28), Garland Co., Gulpha Cr. at jct. with Lake Hamilton, 10 mi. E. of Hot Springs; Black and Black; June 23, 1938. 127842 (8, 19–38), Lincoln Co., Caney Cr., 1 mi. N. of Star City; Black and Black; June 20, 1939. 127885 (1, 16), Bradley Co., Saline R., 5 mi. N. of Warren; Black and Black; June 20, 1939. 128060 (1, 16), Polk Co., trib. of Mountain Fk., 6 mi. SW. of Mena; Black and Black; July 6, 1939. 128106 (1, 36), Howard Co., Holly Cr., one-half mi. SE. of Dierks; Black and Black; July 7, 1939. 128138 (1, 32), Pike Co., Prairie Cr., Murfreesboro; Black and Black; July 7, 1939. 128247 (1, 23), Hempstead Co., Middle Fk. of Bois d'Arc Cr., 5.5 mi. NE. of Fulton; Black and Black; July 12, 1939. 128277 (4, 16–24), Garland Co., Gulpha Cr., 6 mi. SE. of Hot Springs; Black and Black; July 12, 1939.

=*Etheostoma* (*Oligocephalus*) *radiosum radiosum* (Hubbs and Black). See Moore and Rigney (1952).

Poecilichthys zonalis Cope, 1868, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 6, p. 212, color pl. 24, fig. 1.

Lectotype: ANSP 13799 (♂, 42), Virginia, Holston R.; E. D. Cope; herein selected by Dr. Chu-fa Tsai. D XI–11; A II,7; LL 55; INF 4 +3; POM 10; branchisotegals 5; chest naked; cheeks, opercles, and belly completely covered with scales; 6 dorsal blotches.

Paralectotypes: ANSP 13800–1 (♀, 38; ♂, 47), same locality data as lectotype.

Fowler (1907, p. 524) erroneously designated ANSP 14036 lectotype and ANSP 14037–38 paralectotypes. These specimens are not types of *P. zonalis* but are some of the syntypes of *Hyostoma simoterum* Cope. The color plate accompanying Cope's original description shows clearly that Cope had both *E. zonale* and *E. simoterum* from the Holston. Fowler's figure 8, which is labeled as the type of *P. zonalis*, represents a specimen of *Hyostoma simoterum*.

=*Etheostoma* (*Etheostoma*) *zonale zonale* (Cope).

Poecilosoma erythrogastrum Kirtland, 1854, Annals of Science, includ. Trans. Cleveland Acad. Nat. Sci., vol. 2, no. 1, p. 4.

Syntypes: USNM 1815 (?), Ohio, Rocky R., 7 mi. W. of Cleveland; J. P. Kirtland. We have been unable to locate this collection.

=*Etheostoma* (*Oligocephalus*) *caeruleum caeruleum* Storer. See Knapp (1964).

Poecilosoma transversum Abbott, 1860, Proc. Acad. Nat. Sci. Philadelphia, vol. 12, p. 326.

Lectotype: ANSP 13810 (1, 38), locality unknown; number selected by Fowler (1907, p. 525); specimen herein selected. D X–13; A II,7;

LL 31+15=46; INF 4+3; supratemporal canal complete. Abbott noted that there were no data with the specimens and assumed that they might have come from Lake Superior. This could not be so because *E. caeruleum* does not occur there.

Paralectotypes: ANSP 13811–19 (9, 28–42), same data as lectotype.

=*Etheostoma* (*Oligocephalus*) *caeruleum caeruleum* Storer. See Knapp (1964).

Rheocrypta copelandi Jordan, 1877, U.S. Nat. Mus. Bull. 10, p. 9.

Lectotype: USNM 20143 (♂, 43), Indiana, White R., 5 mi. N. of Indianapolis; Jordan and Copeland; herein selected. D XI–12; A II,9; LL 53; INF 8; POM 10; opercles scaled; cheeks naked. Jordan and Evermann (1896, p. 1046) listed USNM 20143, which contained two specimens, as type; herein further restricted.

Paralectotypes: USNM 197996 (♂, 43), removed from USNM 20143; USNM 23461 (♂, 44); MCZ 24392 (♂, 39), and BMNH 1880. 1.21.36–37 (2 ♂, 43–45); all part of Jordan's material originally "some thirty in number" from the type locality.

=*Percina* (*Cottogaster*) *copelandi* (Jordan).

Richia brevispina Coker, 1926, Bull. Bur. Fish., vol. 42, p. 106, fig. 1.

Holotype: USNM 87411 (♂, 36), North Carolina, Burke Co., Paddy's Cr., just above head of Paddy's Cr. Lake, part of artificial Lake James system near Bridgewater, Catawba drainage; R. E. Coker; August 1922.

Paratypes: USNM 87412 (2, 27–36), same data as holotype.

=*Etheostoma* (*Catonotus*) *flabellare* ssp. See Hubbs (1927) and Myers (1927). [= *E.* (*C.*) *f. brevispina* (Coker) according to Ross and Carico (1963, p. 13)].

Sciaena caprodes Rafinesque, 1818, Amer. Month. Mag. and Critical Rev., vol. 3, no. 5, p. 354.

Types: Type locality—the Ohio River. As Call (1899) noted, Rafinesque did not preserve any of his type material. Examination of a sketch of this species in Rafinesque's notebook (fig. 5) shows that the name is correctly attributed.

=*Percina* (*Percina*) *caprodes caprodes* (Rafinesque).

Ulocentra gilberti Evermann and Thoburn *in* Jordan and Evermann, 1896, U.S. Nat. Mus. Bull. 47, p. 1049.

Holotype: USNM 47531 (1, 38), Tennessee, Clinch R. at Walker's Ford, near Tazewell; B. W. Evermann, J. T. Scovell, and R. R. Gurley; Oct. 12, 1893; figured in Jordan and Evermann (1900, fig. 446).

Paratypes: USNM 125373 (1, 36), orig. BF 285, and SU 1954 (2, 47), same data as holotype. The original description was sup-

posedly based on three specimens, so there may have been an error in the original description. The SU bottle was broken during the 1906 earthquake, so there is also a possibility that another specimen of the same species became mixed with SU 1954.

=*Percina* (*Cottogaster*) *copelandi* (Jordan).

Ulocentra meadiae Jordan and Evermann, 1898, U.S. Nat. Mus. Bull. 47, p. 2852.

Holotype: USNM 48903 (♂, 46), Tennessee, Indian Cr., trib. of Powell R. at Cumberland Gap; R. R. Gurley; Oct. 17, 1893; figured by Jordan and Evermann (1900, fig. 447).

Paratypes: USNM 125623 (♂, 46), same data as holotype; orig. BF 711. The third paratype was sent to SU according to a U.S. Fish Comm. distribution list, but Böhlke (1953) did not list it among the Stanford types, and we were unable to find it there.

=*Etheostoma* (*Boleosoma*) *jessiae* (Jordan and Brayton).

Vaillantia chlorosoma Hay, 1881, Proc. U.S. Nat. Mus., vol. 3, p. 495.

Syntypes: USNM 27428, Mississippi, branch of Tuscumbia R. at Corinth; O. P. Hay; March–April 1880; completely disintegrated and dried by 1937. SU 726 (3 ♀, 37–41), Mississippi, Macon; Hay. Although not listed as types by Böhlke (1953), the data on the label, plus a label reading "cotypes," lead us to believe this is part of the

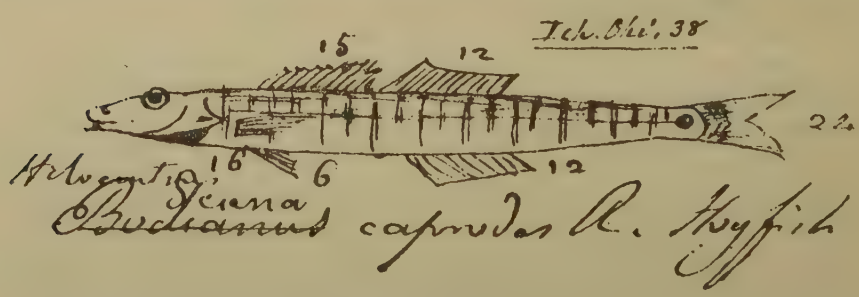

FIGURE 5.—*Sciaena caprodes* Rafinesque (sketch from Rafinesque's notebook).

original type material. The original description was based on specimens from the Tuscumbia R. at Corinth, Sandy Cr. at Artesia, and Horsehunter Cr. at Macon. Some of this material was placed in the U.S. National Museum, some in Jordan's collections, and the remainder in the Butler University collection. It seems likely that SU 726 represents material given to Jordan by Hay.

=*Etheostoma* (*Boleosoma*) *chlorosomum* (Hay).

Villora edwini Hubbs and Cannon, 1935, Misc. Publ. Mus. Zool. Univ. Michigan, no. 30, p. 13, pl. 1, fig. 1.

Holotype: UMMZ 87892 (♂, 37), Florida, Alachua-Columbia Co. line, Santa Fe R. at Poe Springs; E. T. Boardman; Feb. 8, 1928.

Paratypes: UMMZ 107047 (3, 30–35) and USNM 94684 (♀, 33), same data as holotype. UMMZ 101680 (2 ♀, 33–35), same locality; J. D. Kilby and A. F. Carr; Mar. 19, 1934. UMMZ 88685 (1, 25), Georgia, Early Co., trib. of Chattahoochee R., 2 mi. NW. of Jakin; E. P. Creaser and H. R. Becker; Sept. 15, 1929. MCZ 98 (1, ?), "Ga."; Barratt; no longer present in MCZ collection.

=*Etheostoma* (*Villora*) *edwini* (Hubbs and Cannon). See Collette and Yerger (1962).

Villora okaloosae Fowler, 1941, Proc. Acad. Nat. Sci. Philadelphia, vol. 92, p. 242, fig. 12.

Holotype: ANSP 69159 (♀, 24), Florida, Okaloosa Co., Little Rocky Cr., 7 mi. NE. of Niceville on rt. 218 (now Fla. 285); F. Harper; June 20, 1939. Holotype redescribed by Collette and Yerger (1962).

=*Etheostoma* (*Villora*) *okaloosae* (Fowler). See Yerger (1960) and Collette and Yerger (1962).

Checklist of Nominal Species

acuticeps Bailey, *Etheostoma*. (UMMZ)
aesopus Cope, *Boleosoma*. (ANSP?)
alabamae—see *whipplei alabamae*.
anceps Vaillant, *Plesioperca*. (MNHN)
appalachia—see *barratti appalachia*.
arcansanum—see *zonale arcansanum*.
arcus-celestis Crevecoeur, *Etheostoma*. (USNM?)
artesiae Hay, *Poecilichthys*. (USNM)
asprellus Jordan, *Pleurolepis*. (INHS)
asprigenis Forbes, *Poecilichthys*. (SU)
aspro Cope and Jordan, *Alvordius*. (X)
atraque—see *fusiformis atraque*.
atripinnis Jordan, *Arlina*. (USNM)
atromaculata Girard, *Estrella*. (?)
aubeenaubei Evermann, *Etheostoma*. (USNM)
aurantiacus Cope, *Cottogaster*. (ANSP)
australe Jordan, *Etheostoma*—see *fasciatus*, *Diplesion*.

Barratti Holbrook, *Boleosoma*. (MCZ, UMMZ)
barratti appalachia Bailey, *Hololepis*. (UMMZ, CU, DU)
beani Jordan, *Poecilichthys*. (USNM)
beanii Jordan, *Ammocrypta*. (USNM)
bimaculata Haldeman, *Percina*. (USNM?)
binotatum—see *hopkinsi binotatum*.

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blennioides Rafinesque, *Etheostoma*. (X)
blennioperca Cope, *Hyostoma*. (ANSP)
blennius Gilbert and Swain, *Etheostoma*. (USNM, SU)
borealis Jordan, *Poecilichthys*. (USNM, SU)
brevipinnis—see *olmstedi brevipinnis*.
brevispina Coker, *Richia*. (USNM)
butlerianus Hay, *Poecilichthys*. (USNM)
burtoni—see *caprodes burtoni*.

caerulea Storer, *Etheostoma*. (MCZ)
camurum Forbes, *Boleosoma*. (USNM, SU, MCZ, UMMZ)
camurus Cope, *Poecilichthys*. (ANSP)
caprodes Rafinesque, *Sciaena*. (X)
caprodes burtoni Fowler, *Percina*. (ANSP)
carbonaria Baird and Girard, *Pileoma*. (USNM, MCZ, UMMZ)
cheneyi Evermann and Kendall, *Cottogaster*. (USNM, SU)
chlorosoma Hay, *Vaillantia*. (USNM, SU)
cinerea Storer, *Etheostoma*. (?)
clara Jordan and Meek, *Ammocrypta*. (USNM, SU, UMMZ)
collis Hubbs and Cannon, *Hololepis*. (UMMZ)
collis lepidinion Collette, *Etheostoma*. (USNM, CU, DU)
coosae Fowler, *Poecilichthys*. (ANSP)
copelandi Jordan, *Rheocrypta*. (USNM, MCZ, BMNH)
cragini Gilbert, *Etheostoma*. (USNM)
crassus Jordan and Brayton, *Alvordius*. (USNM)
cumberlandicum Jordan and Swain, *Etheostoma*. (USNM)
cyanorum—see *radiosus cyanorum*.
cymatogramma Abbott, *Pileoma*. (ANSP)
cymatotaenia Gilbert and Meek, *Etheostoma*. (USNM, SU)

davisoni Hay, *Etheostoma*. (USNM)
ditrema Ramsey and Suttkus, *Etheostoma*. (TU, USNM, MCZ, ANSP, CU, SU, UMMZ)
duryi Henshall, *Etheostoma*. (X)

edwini Hubbs and Cannon, *Villora*. (UMMZ, USNM, MCZ)
effulgens Girard, *Arlina*. (USNM)
elegans Girard, *Boleichthys*. (MCZ)
elegans Hay, *Nanostoma*. (USNM, SU)
eos Jordan, *Boleichthys*. (USNM)
erizonus—see *euzonus erizonus*.
erochrous Cope, *Hololepis*. (MNHN)
erythrogastrum Kirtland, *Poecilosoma*. (USNM?)
eulepis—see *nigrum eulepis*.
euzonus erizonus Hubbs and Black, *Poecilichthys*. (UMMZ)
euzonus euzonus Hubbs and Black, *Poecilichthys*. (UMMZ, USNM)

evermanni Moenkhaus, *Hadropterus*. (USNM)
evides Jordan and Copeland, *Alvoridus*. (USNM, MCZ)
exilis Girard, *Boleichthys*. (USNM, MCZ, UMMZ)

fasciatus Girard, *Catonotus*. (USNM, MCZ)
fasciatus Girard, *Diplesion*. (MCZ, UMMZ)
flabellaris Rafinesque, *Etheostoma*. (X)
fonticola Jordan and Gilbert, *Alvarius*. (USNM)
fontinalis Rafinesque, *Etheostoma*. (X)
formosa Henshall, *Etheostoma*. (?)
fricksia Hildebrand, *Etheostoma*. (USNM)
fusiforme Girard, *Boleosoma*. (USNM, MCZ, UMMZ)
fusiformis atraque Hubbs and Cannon, *Hololepis*. (UMMZ, USNM)
fusiformis insulae Hubbs and Cannon, *Hololepis*. (MCZ, UMMZ)
fusiformis metae-gadi Hubbs and Cannon, *Hololepis*. (USNM, UMMZ)

gelida Hay, *Ammocrypta*. (USNM)
gilberti Evermann and Thoburn, *Ulocentra*. (USNM, SU)
gracile Girard, *Boleosoma*. (USNM, MCZ)
grahami Girard, *Oligocephalus*. (MCZ)
güntheri Eigenmann and Eigenmann, *Etheostoma*. (BMNH)
gutselli Hildebrand, *Poecilichthys*. (USNM)

hildebrandti Evermann and Clark, *Etheostoma*. (USNM)
histrio Jordan and Gilbert, *Etheostoma*. (USNM, SU)
hopkinsi Fowler, *Poecilichthys*. (ANSP)
hopkinsi binotatum Bailey and Richards, *Etheostoma*. (CU, UMMZ, USNM)
humeralis Girard, *Oligocephalus*. (USNM, MCZ)

inscriptus Jordan and Brayton, *Nothonotus*. (USNM)
insulae—see *fusiformis insulae*.
iowae Jordan and Meek, *Etheostoma*. (SU)

jessiae Jordan and Brayton, *Poecilichthys*. (?)
jordani Gilbert, *Etheostoma*. (USNM, CAS, BMNH, UMMZ)
juliae Meek, *Etheostoma*. (USNM, SU)

kanawhae Raney, *Poecilichthys*. (UMMZ, CU, USNM)
Kennicotti Putnam, *Catonotus*. (USNM, MCZ, UMMZ)

lenticula Richards and Knapp, *Percina*. (CU, TU, USNM, UMMZ)
leonensis Girard, *Oligocephalus*. (MCZ)
lepida Baird and Girard, *Boleosoma*. (USNM, MCZ, UMMZ)
lepidinion—see *collis lepidinion*.
lepidogenys Evermann and Kendall, *Etheostoma*. (USNM)

lineolatus Agassiz, *Catonotus*. (MCZ, UMMZ, MNHN)
Linsleyi Storer, *Etheostoma*. (?)
longimana Jordan, *Etheostoma*. (MCZ, USNM, UMMZ)
luteovinctum Gilbert and Swain, *Etheostoma*. (USNM, SU)
lynceum Hay, *Etheostoma*. See *elegans*, *Nanostoma* for types.

macrocephalum Cope, *Etheostoma*. (ANSP)
maculata Kirtland, *Etheostoma*. (?)
maculaticeps Cope, *Boleosoma*. (ANSP)
maculatum Agassiz, *Boleosoma*. (USNM)
maculatus Girard, *Alvordius*. (USNM?)
maculatus Girard, *Hadropterus*. (USNM)
manitou Jordan, *Percina*. (USNM)
mariae Fowler, *Belophlox*. (ANSP)
maxinkuckiensis Evermann, *Hadropterus*. (USNM)
meadiae Jordan and Evermann, *Ulocentra*. (USNM)
mesaeus Cope, *Poecilichthys*. (ANSP)
metae-gadi—see *fusiformis metae-gadi*.
microperca Jordan and Gilbert, *Etheostoma*. See *punctulata*, *Microperca* for types.
micropterus Gilbert, *Etheostoma*. (USNM)
minima Haldeman, *Perca*. (ANSP)
montanus—see *whipplii montanus*.
montuosa—see *notogramma montuosa*.
moorei Raney and Suttkus, *Etheostoma*. (CU, TU, USNM, UMMZ, UK)
mutatum Vaillant, *Boleosoma*. See *maculatum*, *Boleosoma* for types.

nasutus Bailey, *Hadropterus*. (UMMZ, USNM)
nebulosa Haldeman, *Perca*. (ANSP)
nevisense Cope, *Etheostoma*. (ANSP?)
Newmanii Agassiz, *Hyostoma*. (USNM, MCZ, UMMZ)
nianguae Gilbert and Meek, *Etheostoma*. (USNM, SU)
nianguae spilotum Gilbert, *Etheostoma*. (USNM, SU)
nigra Rafinesque, *Etheostoma*. (X)
nigrofasciata raneyi Crawford, *Percina*. (CU, USNM)
nigrofasciatus Agassiz, *Hadropterus*. (MCZ, USNM, UMMZ)
nigrofasciatus westfalli Fowler, *Hadropterus*. (ANSP)
nigrum eulepis Hubbs and Greene, *Boleosoma*. (UMMZ, USNM, UW)
notogramma montuosa Hogarth and Woolcott, *Percina*. (USNM, UMMZ, CU, UR, VPI)
notogrammus Raney and Hubbs, *Hadropterus*. See *maculatus*, *Hadropterus* for types.
nuchale Howell and Caldwell, *Etheosoma*. (UMMZ, USNM, TU, UAIC)

obeyense Kirsch, *Etheostoma*. (USNM, SU, BMNH)
okaloosae Fowler, *Villora*. (ANSP)
oligoporus—see *thermophilus oligoporus*.
olmstedi Storer, *Etheostoma*. (MCZ)
olmstedi brevipinnis Cope, *Boleosoma*. (ANSP)
osburni Hubbs and Trautman, *Poecilichthys*. (UMMZ, USNM, OSM)
ouachitae Jordan and Gilbert, *Etheostoma*. (USNM, UMMZ)
oxyrhynchus Hubbs and Raney, *Hadropterus*. (UMMZ, USNM)

pagei Meek, *Etheostoma*. (USNM)
pallididorsum Distler and Metcalf, *Etheostoma*. (KU, USNM, UMMZ, CU)
palmaris Bailey, *Hadropterus*. (UMMZ, USNM)
paludosus—see *radiosus paludosus*.
palustris Gilbert, *Poecilichthys*. (USNM)
pantherinus Moore and Reeves, *Hadropterus*. (UMMZ, OAM, MCZ, USNM)
parvipinne Gilbert and Swain, *Etheostoma*. (USNM)
pellucidus Agassiz, *Pleurolepis*. (USNM, MCZ, UMMZ)
peltatum Stauffer, *Etheostoma*. (ANSP)
perlongum Hubbs and Raney, *Boleosoma*. (UMMZ)
phlox Cope, *Boleosoma*. (ANSP)
phoxocephalum Nelson, *Etheostoma*. (UMMZ)
podostemone Jordan and Jenkins, *Etheostoma*. (USNM)
potsii Girard, *Aplesion*. (MCZ)
proeliaris Hay, *Microperca*. (USNM)
pulchellus Girard, *Oligocephalus*. (MCZ)
punctulata Putnam, *Microperca*. (USNM, MCZ, UMMZ).
punctulatus Agassiz, *Poecilichthys*. (MCZ)
putnami Jordan and Gilbert, *Cottogaster*. (USNM)

quapella Eigenmann and Eigenmann, *Etheostoma*. (BMNH)
quiescens Jordan, *Poecilichthys*. (USNM)

radiosus—see *whipplii radiosus*.
radiosus cyanorum Moore and Rigney, *Poecilichthys*. (UMMZ, OAM, MCZ, USNM, UOMZ)
radiosus paludosus Moore and Rigney, *Poecilichthys*. (UMMZ, MCZ, UOMZ, OAM, USNM)
raneyi—see *nigrofasciata raneyi*.
rex Jordan and Evermann, *Etheostoma*. (USNM)
roanoka Jordan and Jenkins, *Etheostoma*. (USNM, SU, CU, MCZ)
rufilineatus Cope, *Poecilichthys*. (ANSP)
rupestre Gilbert and Swain, *Etheostoma*. (USNM)

sagitta Jordan and Swain, *Poecilichthys*. (USNM?)

saludae Hubbs and Cannon, *Hololepis*. (UMMZ, CM, FMNH)
sanguifluus Cope, *Poecilichthys*. (ANSP)
saxatilis Hay, *Poecilichthys*. (USNM)
scierus Swain, *Hadropterus*. (USNM)
scierus apristis Hubbs and Hubbs, *Hadropterus*. (UMMZ, USNM, TNHC, FMNH, OAM, TAMC, SU)
scierus serrula Jordan and Gilbert, *Hadropterus*. (USNM)
sciotense Osburn and Williamson, *Etheostoma*. (USNM)
scovellii Woolman, *Etheostoma*. (USNM, BMNH, CAS)
sellaris Radcliffe and Welsh, *Hadropterus*. (USNM)
semifasciatum DeKay, *Pileoma*. (?)
serrifer Hubbs and Cannon, *Hololepis*. (UMMZ, USNM, CM)
serrula—see *scierus serrula*.
shumardi Girard, *Hadropterus*. (USNM)
simoterum Cope, *Hyostoma*. (ANSP, USNM, MNHN)
spectabilis Agassiz, *Poecilichthys*. (UMMZ, MCZ, USNM)
spillmani Hay, *Hadropterus*. (USNM)
spilotum—see *nianguae spilotum*.
squamatus Gilbert and Swain, *Etheostoma*. (USNM)
squamiceps Jordan, *Etheostoma*. (USNM)
stigmaeum Jordan, *Boleosoma*. (ANSP)
susanae Jordan and Swain, *Boleosoma*.(USNM)
swaini Jordan, *Poecilichthys*. (USNM)
swannanoa Jordan and Evermann, *Etheostoma*. (USNM, SU, UMMZ)

tessellata Storer, *Etheostoma*. (?)
tessellatum DeKay, *Boleosoma*. (?)
tessellatus Jordan, *Hadropterus*. (USNM)
tetrazonus Hubbs and Black, *Poecilichthys*. (UMMZ)
thalassinus Jordan and Brayton, *Nothonotus*. (USNM, SU, MCZ, BMNH)
thermophilus Hubbs and Cannon, *Hololepis*. (UMMZ, USNM)
thermophilus oligoporus Bailey and Frey, *Hololepis*. (UMMZ, DU)
tippecanoe Jordan and Evermann, *Etheostoma*. (USNM)
transversum Abbott, *Poecilosoma*. (ANSP)
trisella Bailey and Richards, *Etheostoma*. (UMMZ)
tuscumbia Gilbert and Swain, *Etheostoma*. (SU, BMNH, UMMZ, USNM)

uranidea Jordan and Gilbert, *Etheostoma*. (USNM)

variata Kirtland, *Etheostoma*. (?)
verecundum Jordan and Evermann, *Etheostoma*. (USNM)
versicolor Agassiz, *Poecilichthys*. (USNM)
vexillare Jordan, *Boleosoma*. (?)
vigil Hay, *Ioa*. (USNM)

vinctipes Jordan, *Nanostoma*. (USNM)
virgatus Jordan, *Poecilichthys*. (USNM, UMMZ)
vitreus Cope, *Poecilichthys*. (ANSP?)
vivax Hay, *Ammocrypta*. (USNM)
vulneratus Cope, *Poecilichthys*. (ANSP)

warreni Girard, *Boleichthys*. (MCZ)
westfalli—see *nigrofasciatus westfalli*.
whipplei alabamae Gilbert and Swain, *Etheostoma*. (USNM, SU)
whipplii Girard, *Boleichthys*. (MCZ)
whipplii montanus Hubbs and Black, *Poecilichthys*. (UMMZ, USNM)
whipplii radiosus Hubbs and Black, *Poecilichthys*. (UMMZ, USNM)
wrighti McCormick, *Etheostoma*. (?)

zebra Agassiz, *Pileoma*. (MCZ, UMMZ)
zonale arcansanum Jordan and Gilbert, *Etheostoma*. (USNM, UMMZ)
zonalis Cope, *Poecilichthys*. (ANSP)
zonifer Hubbs and Cannon, *Hololepis*. (UMMZ)

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